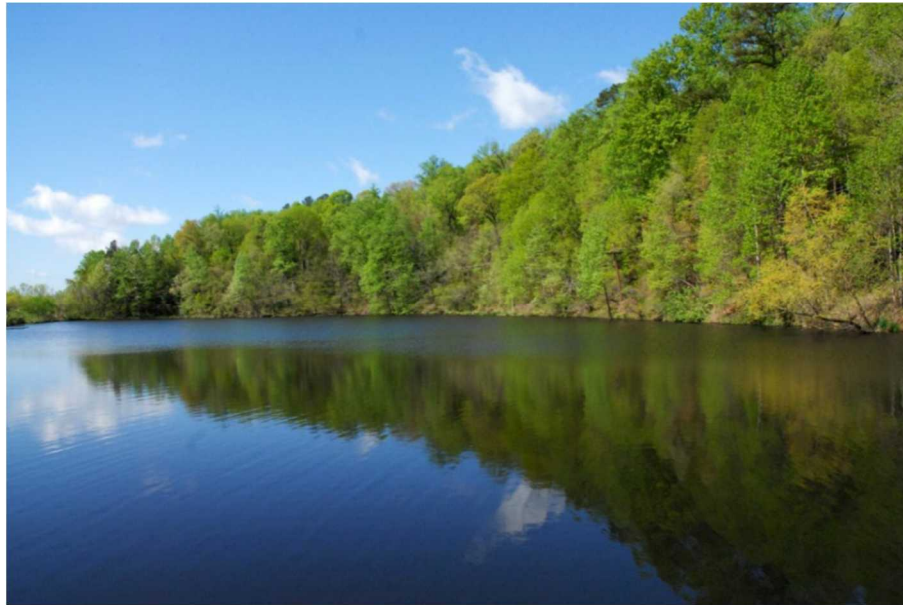


Interim Measures (IM) Quarterly Report February 2014 Sampling Event

**Walter Coke
3500 35th Avenue North
Birmingham, Alabama
US EPA ID No. ALD 000 828 848**

April 15, 2014
Project No. E1127095



Prepared for:

Walter Coke
Birmingham, AL

Prepared by:

Terracon Consultants, Inc.
Birmingham, AL

terracon.com

Terracon

Environmental



Facilities



Geotechnical



Materials



April 15, 2014

Walter Coke
3500 35th Avenue North
Birmingham, Alabama 35207

Attention: Mr. Don Wiggins
Re: **Interim Measures (IM) Quarterly Report**
February 2014 Sampling Event
Walter Coke
3500 35th Avenue North
Birmingham, Alabama 35207
US EPA ID No. ALD 000 828 848
Terracon Project No. E1127095

Dear Mr. Wiggins:

Terracon Consultants, Inc. has completed the enclosed *Interim Measures (IM) Quarterly Report, February 2014 Sampling Event* for the above-referenced site. This report has been prepared in general accordance with the approved Groundwater Interim Measures Work Plan.

Terracon appreciates the opportunity to work with you on this project. If you have any questions concerning this report, please call me at (205) 942-1289.

Sincerely,
Terracon Consultants, Inc.



Terrell W. Rippstein, P.G., P.G.
Principal Geologist



Eugene Whitmill, Senior Project Engineer

Terracon Consultants, Inc. 110 12th Street North Birmingham, Alabama 35203
P (205) 942-1289 F (205) 443-5302 terracon.com

Environmental

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Interim Measures (IM) Quarterly Report February 2014 Sampling Event

**Walter Coke
3500 35th Avenue North
Birmingham, Alabama 35207
US EPA ID No. ALD 000 828 848
April 15, 2014
Terracon Project No. E1127095**

1.0 INTRODUCTION

This IM Quarterly Report was prepared by Terracon Consultants, Inc. (Terracon) as discussed in the final, modified, and approved Groundwater Interim Measures Work Plan (IMWP), dated May 2012, prepared by CH2MHill for the Former Chemical Plant (FCP) at the Walter Coke, Inc. (Walter Coke) facility located at 3500 35th Avenue North in Birmingham, Jefferson County, Alabama. The Work Plan and Addendum was approved by the USEPA in a letter dated April 16, 2012. The IM is being conducted at the Walter Coke facility in the area known as the former chemical plant (FCP).

Groundwater and Effluent samples were collected in general accordance with the IM Groundwater Sampling and Analysis Plan (Revision 1.0) dated October 9, 2012 and approved by the USEPA in a letter dated December 4, 2012.

Site activities were conducted under the Site-Specific Health and Safety Plan (Revision 1.0) dated November 9, 2012, and approved by EPA in a letter dated December 4, 2012.

2.0 MONITORING WELL NETWORK

The monitoring wells which are being used to evaluate the effectiveness of the IM in the FCP are listed below and shown on Figure 1.

Well ID	Monitored Unit	Screened Interval (ft bgs)	Depth to Bedrock (ft bgs)
MW-49S	SB	16-26	13.5
MW-50	SB	25-35	19
MW-51	SB	14-24	9
MW-52	SB	11.5-21.5	10.5
MW-53	SB	12-22	10
MW-54	SB	22-32	18
MW-55	SB	12-22	8

Well ID	Monitored Unit	Screened Interval (ft bgs)	Depth to Bedrock (ft bgs)
MW-56	SB	10-20	4
MW-77	SB	25-35	6.5
MW-78	SB	36-46	7.1
MW-80	SB	33-43	20
MW-81	SB	11-21	6.5
MW-70	SB	18.8-28.8	13.3
MW-71	SB	30.8-40.8	12
MW-72	SB	42.8-52.8	16
MW-90	SB	14.5-24.5	9.5
MW-49D	DB	159.5-169.5	13.5
MW-89	DB	280-300	6

SB = Shallow Bedrock

DB = Deep Bedrock

3.0 GROUNDWATER MEASUREMENTS AND SAMPLING

3.1 Water Level Measurements

The selected Shallow bedrock wells are screened within the shallow bedrock at depths ranging from 10 to 50 feet below ground surface (feet bgs). The two deep bedrock wells are screened approximately 160 to 300 feet bgs. Historical water level measurements and those collected from February 2014 are presented in Table 1. A hydrograph for the historical groundwater elevations is included as Figure 2. A Potentiometric Surface Map was prepared from the water levels collected in February 2014, and is included as Figure 3.

In general, groundwater flow was found to be towards the east-southeast in the shallow bedrock flow zone. Based on a review of hydraulic conductivities presented in previous reports prepared by ARCADIS, the average hydraulic conductivity (K) in the shallow bedrock flow zone in SMA 4 is 6.7E-4 cm/second (1.3E-3 ft/minute). The average hydraulic gradient (i) measured in SMA 4 during the February 2014 measurement event was calculated to be 0.015 ft/ft for the shallow bedrock flow zone.

The groundwater flow velocity can be calculated using the Darcy equation:

$$v = Ki$$

where:

v= Darcy groundwater flow velocity

k = hydraulic conductivity

i = hydraulic gradient

$$V = 1.3E-3 \text{ ft/min} \times 0.015 \text{ ft/ft}$$

Therefore

$$V = 1.95E-5 \text{ ft/min or } (10.25 \text{ ft/year})$$

A transducer study was conducted in wells MW-49S, MW-50, and MW-51 starting one week prior to system start-up and continued for one month after system start-up. The results of the transducer study will be presented in the annual report; however, the study did indicate that drawdown occurred in these monitoring wells as a result of the hydraulic control.

3.2 Groundwater Sampling

Groundwater samples were collected from the 18 monitoring wells listed in Section 2.0 prior to system startup. In addition, groundwater samples were collected quarterly since system start-up in August 2013, November 2013, and February 2014. The groundwater sampling was conducted in accordance with the approved IM Groundwater Sampling and Analysis Plan (Revision 1.0).

In addition to the groundwater samples, the hydraulic control systems' effluent was collected quarterly. The effluent samples were collected from a point located after the groundwater recovered from the containment wells is combined.

The groundwater samples, the effluent samples and quality assurance/quality control (QA/QC) samples were analyzed for volatile organic compounds (VOCs) by USEPA Method 8260B, semi-volatile organic compounds (SVOCs) by USEPA Method 8270D, and polycyclic aromatic hydrocarbons (PAHs) by USEPA Method 8270SIM. The groundwater and effluent sample analytical data are included on Tables 2, 3, and 4. The laboratory reports including the QA/QC data will be submitted as part of the annual report after the fourth groundwater sampling event.

3.3 Data Review and Validation

Analytical data review and validation was performed as described in the approved IM Groundwater Sampling and Analysis Plan (Revision 1.0). Terracon conducted an internal data review and verification. The data validation was performed by a qualified Terracon professional outside of the project implementation chain-of-command, in accordance with the Terracon Corporate Quality Program Manual and this project's data quality objectives (DQOs) as described in the approved IM Groundwater Sampling and Analysis Plan (Revision 1.0).

4.0 FEBRUARY 2014 SAMPLE ANALYTICAL RESULTS

4.1 Volatile Organic Compounds

The following VOCs were detected at some concentration in at least one of the groundwater samples collected during the February 2014 sampling event conducted before the hydraulic control system was turned on. These constituents do not include j-flagged or b-flagged concentrations.

- benzene
- chlorobenzene
- isopropylbenzene
- methylcyclohexane
- 1,2,4-trichlorobenzene
- toluene
- vinyl chloride
- xylenes
- 1,3-dichlorobenzene
- cis-1,2-dichloroethene
- ethylbenzene

4.2 Semi-Volatile Organic Compounds

The following SVOCs were detected at some concentration in at least one of the groundwater samples collected during the February 2014 sampling event conducted before the hydraulic control system was turned on: These constituents do not include j-flagged or b-flagged concentrations.

- 2,4-dimethylphenol
- 2-chlorophenol
- 2-methylphenol
- acenaphthene
- benzo(k)fluoranthene
- anthracene
- acenaphthylene
- benzo(a)anthracene
- benzo(b)fluoranthene
- benzo(g,h,i)perylene
- benzo(a)pyrene
- chrysene
- dibenzo(a,h)anthracene
- fluoranthene

- Fluorene
- Indeno(1,2,3-cd)pyrene
- 1,2,4-trichlorobenzene
- 1,3-dichlorobenzene
- fluorene
- phenol
- phenanthrene
- pyrene
- 1,4-dichlorobenzene
- naphthalene
- 2-methylnaphthalene
- 3& 4 methylphenol

4.3 Analytical Trends

Graphs illustrating the trends of select VOCs for the 18 monitoring wells are included in Appendix A. The constituents selected are consistent with those presented in the approved Interim Measures Work Plan. A constituent concentration map for select VOC constituents from the February 2014 sampling event is included as Figure 4.

Based on the trends of the VOCs in the offsite monitoring well MW-50, VOC concentrations have decreased since hydraulic control has been initiated.

5.0 MASS REMOVAL CALCULATIONS

The concentrations of the chemicals detected in the effluent samples were multiplied by the volume of water extracted from the system during the January 2014 through March 2014 monitoring period to calculate the total mass extracted in pounds for each quarter. From January 2014 through March 2014, 93,112 gallons of water were pumped by the hydraulic control system. Table 5 includes the total VOCs and SVOCs recovered from January 2014 through March 2014. The February 2014 effluent sample was used to calculate the January 2014 through March 2014 volume calculation. The total mass of VOCs and SVOCs removed from January 2014 through March 2014 was 1.45 pounds.

6.0 HYDRAULIC CONTROL SYSTEM EVALUATION

This section evaluates the performance of the corrective action system.

The hydraulic control system at the site includes recovery wells CW-1, through CW-6. These wells are connected via a series of pumps and discharge lines that are used to create a capture

zone at the downgradient edge of the groundwater plume to prevent migration off-site and capture the contaminant plume.

The pumps in each of the recovery wells have been pumping as presented in the approved Work Plan. The pumps have only needed routine maintenance.

The combined flow of recovered groundwater goes into a tank which is located inside a concrete secondary containment berm. The water from the tank is then pumped to the light oil system in the Coke Plant for use as process water in the coke manufacturing process. Between when the water enters the tank and in the pumping process to the plant, iron precipitation has been occurring and has reduced the volume of water that the system could pump. This decrease in the pumping can be observed in the decrease in the total volume of water pumped quarter to quarter.

A PF50 filtration unit was installed on Friday, March 14th to remove iron which had been precipitating into the pumps and lines and causing a reduced groundwater flow through the system. Since the filtration unit has been installed, approximately 40,000 gallons of water was captured during the last two weeks of March. At this rate, the pumping rate would move back up to around 240,000 gallons per quarter. The filter system will continue to be tweaked to obtain optimal flow.

7.0 SYSTEM IMPROVEMENTS

The following items are being addressed to increase the system's effectiveness:

- The filter system has been installed. The filter system will continue to be tweaked to ensure optimal pumping.
- In addition, due to the iron fouling, the flow meter has quit working several times and new flow meters have been installed. The reported volume of water may be less than actually pumped due to the failure of the flow meters. We are evaluating different flow meters to determine the best model to use.

At this point, resolving the iron fouling in the system is the only issue reducing the system's effectiveness.

8.0 SUMMARY

Based on field and analytical data, Terracon presents the following conclusions:

- Groundwater flow is predominately to the east-southeast with an average groundwater flow velocity of 10.25 feet/year.
- VOCs in offsite monitoring well MW-50 have generally decreased since the hydraulic control system has been in operation.
- Mass removal was maximized during the first quarter of operation. A decrease in effluent concentrations and total volume of effluent has reduced mass removal during the third quarter of operation.
- Iron fouling has decreased the system groundwater pumping volume. This problem is currently being addressed by Walter Coke, and it is anticipated that an increased pumping rate will be seen during the next quarter.

In accordance with the approve IM Work Plan, the next quarterly report will be prepared in July 2014.

Table 1. Summary of Groundwater Level Measurements

Walter Coke - USEPA ID No. ALD 000 828 848

3500 35th Avenue North

Birmingham, Alabama



Groundwater Monitoring Well Data

	MW-49S	MW-50	MW-51	MW-52	MW-53	MW-54	MW-55	MW-56	MW-70	MW-71	MW-72	MW-77	MW-78	MW-80	MW-81	MW-90	MW-49D	MW-89
Casing Elevation	581.41	580.93	582.07	579.38	582.33	582.62	583.49	581.70	575.80	573.96	575.99	581.38	578.76	581.83	582.55	581.31	581.37	573.96
Casing Ht. above Grade	2.93	2.93	2.56	- 0.21	- 0.12	- 0.08	- 0.07	- 0.31	0.22	0.25	0.30	2.82	- 0.25	- 0.25	- 0.25	2.83	2.84	- 0.25
Well Depth from TOC	26.50	35.50	24.50	25.00	25.00	34.00	22.58	20.50	29.00	41.00	53.00	39.00	46.00	43.00	24.00	24.50	170.00	300.00
Ground Elevation	578.48	578.00	579.51	579.59	582.45	582.70	583.56	582.01	575.58	573.71	575.69	578.56	579.01	582.08	582.80	578.48	578.53	574.21
Bottom of Well EL	554.91	545.43	557.57	554.38	557.33	548.62	560.91	561.20	546.80	532.96	522.99	542.38	532.76	538.83	558.55	556.81	411.37	273.96
Depth to top of screen	16.50	25.50	14.50	15.00	15.00	24.00	12.58	10.50	19.00	31.00	43.00	29.00	36.00	33.00	14.00	14.50	160.00	280.00
Screen Length	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	20.00
Top of screen EL	561.98	552.50	565.01	564.59	567.45	558.70	570.98	571.51	556.58	542.71	532.69	549.56	543.01	549.08	568.80	563.98	418.53	294.21
Bottom of screen EL	551.98	542.50	555.01	554.59	557.45	548.70	560.98	561.51	546.58	532.71	522.69	539.56	533.01	539.08	558.80	553.98	408.53	274.21

Water Level Observations

Sampling Event Date	MW-49S							MW-50							MW-51						
	Depth from TOC	Water Level EL	Field Parameters (Average)					Depth from TOC	Water Level EL	Field Parameters (Average)					Depth from TOC	Water Level EL	Field Parameters (Average)				
			pH	(mS/cm)	Temp. (°C)	Turb. (NTU)	D.O. (ppm)			pH	(mS/c m)	Temp. (°C)	Turb. (NTU)	D.O. (ppm)			pH	(mS/cm)	Temp. (°C)	Turb. (NTU)	D.O. (ppm)
January-13	6.67	574.74						7.25	573.68						4.65	577.42					
February-13	6.60	574.81						7.19	573.74						4.57	577.50					
March-13	7.11	574.30						7.85	573.08						5.05	577.02					
April-13	6.96	574.45	6.81	312	21.9	1.0	0.2	7.87	573.06	6.7	263	18.8	0.9	0.3	5.89	576.18	7.05	178	19.7	16.9	0.3
May-13	5.42	575.99						5.63	575.30						3.80	578.27					
June-13	12.22	569.19						11.36	569.57						7.43	574.64					
July-13	14.49	566.92						12.08	568.85						7.55	574.52					
August-13	12.18	569.23	7.05	1417	23.9	1.8	0.6	9.70	571.23	6.77	2017	18.8	0.8	0.8	5.51	576.56	7.06	1942	21.0	3.1	0.8
September-13	13.58	567.83						11.53	569.40						7.56	574.51					
October-13	12.67	568.74						12.49	568.44						8.65	573.42					
November-13	11.88	569.53	7.18	1281	24.6	9.7	2.0	9.78	571.15	6.81	2115	18.7	11.2	1.1	7.74	574.33	7.00	1735	21.4	9.7	1.4
February-14	8.33	573.08	7.37	1292	28.3	8.7	3.4	7.96	572.97	10.47	1417	18.6	4.7	1.6	6.47	575.60	7.21	1709	21.4	34.2	1.7
May-14																					

Table 1. Summary of Groundwater Level Measurements**Walter Coke - USEPA ID No. ALD 000 828 848**

3500 35th Avenue North

Birmingham, Alabama

**Groundwater Monitoring Well Data**

	MW-49S	MW-50	MW-51	MW-52	MW-53	MW-54	MW-55	MW-56	MW-70	MW-71	MW-72	MW-77	MW-78	MW-80	MW-81	MW-90	MW-49D	MW-89
Casing Elevation	581.41	580.93	582.07	579.38	582.33	582.62	583.49	581.70	575.80	573.96	575.99	581.38	578.76	581.83	582.55	581.31	581.37	573.96
Casing Ht. above Grade	2.93	2.93	2.56	- 0.21	- 0.12	- 0.08	- 0.07	- 0.31	0.22	0.25	0.30	2.82	- 0.25	- 0.25	- 0.25	2.83	2.84	- 0.25
Well Depth from TOC	26.50	35.50	24.50	25.00	25.00	34.00	22.58	20.50	29.00	41.00	53.00	39.00	46.00	43.00	24.00	24.50	170.00	300.00
Ground Elevation	578.48	578.00	579.51	579.59	582.45	582.70	583.56	582.01	575.58	573.71	575.69	578.56	579.01	582.08	582.80	578.48	578.53	574.21
Bottom of Well EL	554.91	545.43	557.57	554.38	557.33	548.62	560.91	561.20	546.80	532.96	522.99	542.38	532.76	538.83	558.55	556.81	411.37	273.96
Depth to top of screen	16.50	25.50	14.50	15.00	15.00	24.00	12.58	10.50	19.00	31.00	43.00	29.00	36.00	33.00	14.00	14.50	160.00	280.00
Screen Length	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	20.00
Top of screen EL	561.98	552.50	565.01	564.59	567.45	558.70	570.98	571.51	556.58	542.71	532.69	549.56	543.01	549.08	568.80	563.98	418.53	294.21
Bottom of screen EL	551.98	542.50	555.01	554.59	557.45	548.70	560.98	561.51	546.58	532.71	522.69	539.56	533.01	539.08	558.80	553.98	408.53	274.21

Water Level Observations

Sampling Event Date	MW-52							MW-53							MW-54						
	Depth from TOC	Water Level EL	Field Parameters (Average)					Depth from TOC	Water Level EL	Field Parameters (Average)					Depth from TOC	Water Level EL	Field Parameters (Average)				
			pH	Cond. (mS/cm)	Temp. (°C)	Turb. (NTU)	D.O. (ppm)			pH	Cond. (mS/cm)	Temp. (°C)	Turb. (NTU)	D.O. (ppm)			pH	Cond. (mS/cm)	Temp. (°C)	Turb. (NTU)	D.O. (ppm)
January-13	8.10	571.28						7.02	575.31						0.75	581.87					
February-13	8.04	571.34						3.80	578.53						0.81	581.81					
March-13	8.28	571.10						4.12	578.21						0.89	581.73					
April-13	8.12	571.26	6.73	522	20.2	1.8	2.2	4.00	578.33	6.72	1125	20.1	1.5	0.2	0.60	582.02	7.16	731	20.1	2.7	0.5
May-13	7.73	571.65						3.60	578.73						0.25	582.37					
June-13	8.56	570.82						5.24	577.09						1.25	581.37					
July-13	8.55	570.83						5.52	576.81						1.25	581.37					
August-13	8.31	571.07	6.71	1859	23.9	0.8	0.7	4.80	577.53	6.7	1375	20.9	1.3	0.8	1.12	581.50	7.15	935	21.0	21.8	2.3
September-13	8.57	570.81						5.22	577.11						1.14	581.48					
October-13	8.62	570.76						5.91	576.42						1.18	581.44					
November-13	8.60	570.78	6.71	1714	25.4	11.7	1.6	5.54	576.79	6.71	1268	21.7	8.7	1.7	1.18	581.44	7.06	911	21.4	19.1	2.3
February-14	7.15	572.23	6.82	1707.0	24.10	11	2.8	4.26	578.07	6.68	1308.0	21.50	1.6	1.6	0.96	581.66	7.01	917.0	21.0	1.4	3.1
May-14																					

Table 1. Summary of Groundwater Level Measurements

Walter Coke - USEPA ID No. ALD 000 828 848

3500 35th Avenue North

Birmingham, Alabama



Groundwater Monitoring Well Data

	MW-49S	MW-50	MW-51	MW-52	MW-53	MW-54	MW-55	MW-56	MW-70	MW-71	MW-72	MW-77	MW-78	MW-80	MW-81	MW-90	MW-49D	MW-89
Casing Elevation	581.41	580.93	582.07	579.38	582.33	582.62	583.49	581.70	575.80	573.96	575.99	581.38	578.76	581.83	582.55	581.31	581.37	573.96
Casing Ht. above Grade	2.93	2.93	2.56	- 0.21	- 0.12	- 0.08	- 0.07	- 0.31	0.22	0.25	0.30	2.82	- 0.25	- 0.25	- 0.25	2.83	2.84	- 0.25
Well Depth from TOC	26.50	35.50	24.50	25.00	25.00	34.00	22.58	20.50	29.00	41.00	53.00	39.00	46.00	43.00	24.00	24.50	170.00	300.00
Ground Elevation	578.48	578.00	579.51	579.59	582.45	582.70	583.56	582.01	575.58	573.71	575.69	578.56	579.01	582.08	582.80	578.48	578.53	574.21
Bottom of Well EL	554.91	545.43	557.57	554.38	557.33	548.62	560.91	561.20	546.80	532.96	522.99	542.38	532.76	538.83	558.55	556.81	411.37	273.96
Depth to top of screen	16.50	25.50	14.50	15.00	15.00	24.00	12.58	10.50	19.00	31.00	43.00	29.00	36.00	33.00	14.00	14.50	160.00	280.00
Screen Length	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	20.00
Top of screen EL	561.98	552.50	565.01	564.59	567.45	558.70	570.98	571.51	556.58	542.71	532.69	549.56	543.01	549.08	568.80	563.98	418.53	294.21
Bottom of screen EL	551.98	542.50	555.01	554.59	557.45	548.70	560.98	561.51	546.58	532.71	522.69	539.56	533.01	539.08	558.80	553.98	408.53	274.21

Water Level Observations

Sampling Event Date	MW-55							MW-56							MW-70						
	Depth from TOC	Water Level EL	Field Parameters (Average)					Depth from TOC	Water Level EL	Field Parameters (Average)					Depth from TOC	Water Level EL	Field Parameters (Average)				
			pH	Cond. (mS/cm)	Temp. (°C)	Turb. (NTU)	D.O. (ppm)			pH	Cond. (mS/cm)	Temp. (°C)	Turb. (NTU)	D.O. (ppm)			pH	Cond. (mS/cm)	Temp. (°C)	Turb. (NTU)	D.O. (ppm)
January-13	0.57	582.92						1.02	580.68						5.22	570.58					
February-13	0.57	582.92						0.97	580.73						5.28	570.52					
March-13	0.39	583.10						1.05	580.65						6.59	569.21					
April-13	0.10	583.39	6.59	1230	19.5	1.8	3.6	1.05	580.65	6.85	1466	17.9	1.9	0.6	6.73	569.07	7.11	475	16.6	2.4	0.3
May-13	0.00	583.49						0.86	580.84						2.75	573.05					
June-13	0.95	582.54						3.66	578.04						9.68	566.12					
July-13	0.70	582.79						3.24	578.46						10.37	565.43					
August-13	0.40	583.09	6.65	1501	21.2	17.3	0.8	1.87	579.83	6.9	1210	24.7	7.6	0.6	8.61	567.19	7.07	780	17.4	0.2	1.6
September-13	0.54	582.95						1.52	580.18						10.31	565.49					
October-13	0.78	582.71						1.81	579.89						11.59	564.21					
November-13	0.68	582.81	6.88	896	22.1	19.4	1.3	1.94	579.76	7.02	927	24.5	37.3	1.1	9.11	566.69	7.06	829	18.6	6.3	1.2
February-14	0.18	583.31	6.88	842.0	22.10	7.3	3.1	0.93	580.77	10.42	901.0	17.93	673	2.6	6.34	569.46	11.11	461	16.9	8.7	1.5
May-14																					

Table 1. Summary of Groundwater Level Measurements**Walter Coke - USEPA ID No. ALD 000 828 848**

3500 35th Avenue North

Birmingham, Alabama

**Groundwater Monitoring Well Data**

	MW-49S	MW-50	MW-51	MW-52	MW-53	MW-54	MW-55	MW-56	MW-70	MW-71	MW-72	MW-77	MW-78	MW-80	MW-81	MW-90	MW-49D	MW-89
Casing Elevation	581.41	580.93	582.07	579.38	582.33	582.62	583.49	581.70	575.80	573.96	575.99	581.38	578.76	581.83	582.55	581.31	581.37	573.96
Casing Ht. above Grade	2.93	2.93	2.56	- 0.21	- 0.12	- 0.08	- 0.07	- 0.31	0.22	0.25	0.30	2.82	- 0.25	- 0.25	- 0.25	2.83	2.84	- 0.25
Well Depth from TOC	26.50	35.50	24.50	25.00	25.00	34.00	22.58	20.50	29.00	41.00	53.00	39.00	46.00	43.00	24.00	24.50	170.00	300.00
Ground Elevation	578.48	578.00	579.51	579.59	582.45	582.70	583.56	582.01	575.58	573.71	575.69	578.56	579.01	582.08	582.80	578.48	578.53	574.21
Bottom of Well EL	554.91	545.43	557.57	554.38	557.33	548.62	560.91	561.20	546.80	532.96	522.99	542.38	532.76	538.83	558.55	556.81	411.37	273.96
Depth to top of screen	16.50	25.50	14.50	15.00	15.00	24.00	12.58	10.50	19.00	31.00	43.00	29.00	36.00	33.00	14.00	14.50	160.00	280.00
Screen Length	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	20.00
Top of screen EL	561.98	552.50	565.01	564.59	567.45	558.70	570.98	571.51	556.58	542.71	532.69	549.56	543.01	549.08	568.80	563.98	418.53	294.21
Bottom of screen EL	551.98	542.50	555.01	554.59	557.45	548.70	560.98	561.51	546.58	532.71	522.69	539.56	533.01	539.08	558.80	553.98	408.53	274.21

Water Level Observations

Sampling Event Date	MW-71							MW-72							MW-77						
	Depth from TOC	Water Level EL	Field Parameters (Average)					Depth from TOC	Water Level EL	Field Parameters (Average)					Depth from TOC	Water Level EL	Field Parameters (Average)				
			pH	Cond. (mS/cm)	Temp. (°C)	Turb. (NTU)	D.O. (ppm)			pH	Cond. (mS/cm)	Temp. (°C)	Turb. (NTU)	D.O. (ppm)			pH	Cond. (mS/cm)	Temp. (°C)	Turb. (NTU)	D.O. (ppm)
January-13	3.69	570.27						7.00	568.99						6.22	575.16					
February-13	3.55	570.41						5.18	570.81						6.03	575.35					
March-13	4.05	569.91						5.62	570.37						6.74	574.64					
April-13	4.35	569.61	6.96	649	16.0	2.5	0.2	6.64	569.35	7.07	1127	19.0	1.8	0.2	4.25	577.13	7.3	828	20.9	17.4	1.5
May-13	nm							6.63	569.36						16.39	564.99					
June-13	7.58							9.21	566.78						10.29	571.09					
July-13	8.15							9.74	566.25						7.83	573.55					
August-13	6.23	567.73	6.97	696	18.0	2.6	0.6	8.31	567.68	7.1	1433	18.7	0.3	1.1	6.53	574.85	6.64	968	17.2	7.6	18.1
September-13	8.10							9.72	566.27						16.97	564.41					
October-13	9.54							10.94	565.05						9.33	572.05					
November-13	6.61	567.35	6.94	844	16.4	5.1	2.8	8.49	567.50	7.08	1291	18.7	8.3	1.1	7.52	573.86	7.20	1199	22.5	0.8	1.9
February-14	4.34	569.62	11.53	505.0	15.46	10.1	3.7	6.26	569.73	11.43	810	18.0	10.2	2.8	6.46	574.92	7.63	1098	21.70	0.6	1.8
May-14																					

Table 1. Summary of Groundwater Level Measurements

Walter Coke - USEPA ID No. ALD 000 828 848

3500 35th Avenue North

Birmingham, Alabama



Groundwater Monitoring Well Data

	MW-49S	MW-50	MW-51	MW-52	MW-53	MW-54	MW-55	MW-56	MW-70	MW-71	MW-72	MW-77	MW-78	MW-80	MW-81	MW-90	MW-49D	MW-89
Casing Elevation	581.41	580.93	582.07	579.38	582.33	582.62	583.49	581.70	575.80	573.96	575.99	581.38	578.76	581.83	582.55	581.31	581.37	573.96
Casing Ht. above Grade	2.93	2.93	2.56	- 0.21	- 0.12	- 0.08	- 0.07	- 0.31	0.22	0.25	0.30	2.82	- 0.25	- 0.25	- 0.25	2.83	2.84	- 0.25
Well Depth from TOC	26.50	35.50	24.50	25.00	25.00	34.00	22.58	20.50	29.00	41.00	53.00	39.00	46.00	43.00	24.00	24.50	170.00	300.00
Ground Elevation	578.48	578.00	579.51	579.59	582.45	582.70	583.56	582.01	575.58	573.71	575.69	578.56	579.01	582.08	582.80	578.48	578.53	574.21
Bottom of Well EL	554.91	545.43	557.57	554.38	557.33	548.62	560.91	561.20	546.80	532.96	522.99	542.38	532.76	538.83	558.55	556.81	411.37	273.96
Depth to top of screen	16.50	25.50	14.50	15.00	15.00	24.00	12.58	10.50	19.00	31.00	43.00	29.00	36.00	33.00	14.00	14.50	160.00	280.00
Screen Length	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	20.00
Top of screen EL	561.98	552.50	565.01	564.59	567.45	558.70	570.98	571.51	556.58	542.71	532.69	549.56	543.01	549.08	568.80	563.98	418.53	294.21
Bottom of screen EL	551.98	542.50	555.01	554.59	557.45	548.70	560.98	561.51	546.58	532.71	522.69	539.56	533.01	539.08	558.80	553.98	408.53	274.21

Water Level Observations

Sampling Event Date	MW-78							MW-80							MW-81						
	Depth from TOC	Water Level EL	Field Parameters (Average)					Depth from TOC	Water Level EL	Field Parameters (Average)					Depth from TOC	Water Level EL	Field Parameters (Average)				
			pH	Cond. (mS/cm)	Temp. (°C)	Turb. (NTU)	D.O. (ppm)			pH	Cond. (mS/cm)	Temp. (°C)	Turb. (NTU)	D.O. (ppm)			pH	Cond. (mS/cm)	Temp. (°C)	Turb. (NTU)	D.O. (ppm)
January-13	12.02	566.74						1.68	580.15						1.76	580.79					
February-13	12.04	566.72						1.52	580.31						1.81	580.74					
March-13	12.73	566.03						1.51	580.32						1.90	580.65					
April-13	13.32	565.44	7.03	858	19.4	0.8	0.2	1.35	580.48	6.74	992	18.6	16.3	1.0	1.50	581.05	6.95	602	17.4	1.0	0.7
May-13	11.96	566.80						0.95	580.88						1.31	581.24					
June-13	15.11	563.65						2.17	579.66						1.91	580.64					
July-13	15.30	563.46						2.12	579.71						2.16	580.39					
August-13	14.33	564.43	7.14	1072	20.6	0.8	0.7	1.38	580.45	6.92	1407	19.3	1.6	0.7	1.97	580.58	7.04	802	20.3	3.5	0.6
September-13	15.11	563.65						1.79	580.04						1.54	581.01					
October-13	15.73	563.03						2.72	579.11						2.14	580.41					
November-13	15.67	563.09	7.20	1029	20.0	8.1	1.4	2.71	579.12	6.97	1304	19.5	11.7	1.9	2.35	580.20	7.05	775	20.8	11.4	2.1
February-14	12.31	566.45	10.61	628	20.0	4.9	2.1	1.30	580.53	10.45	667	18.1	8.3	3.3	1.95	580.60	10.46	488	17.7	6.3	2.5
May-14																					

Table 1. Summary of Groundwater Level Measurements

Walter Coke - USEPA ID No. ALD 000 828 848

3500 35th Avenue North

Birmingham, Alabama



Groundwater Monitoring Well Data

	MW-49S	MW-50	MW-51	MW-52	MW-53	MW-54	MW-55	MW-56	MW-70	MW-71	MW-72	MW-77	MW-78	MW-80	MW-81	MW-90	MW-49D	MW-89
Casing Elevation	581.41	580.93	582.07	579.38	582.33	582.62	583.49	581.70	575.80	573.96	575.99	581.38	578.76	581.83	582.55	581.31	581.37	573.96
Casing Ht. above Grade	2.93	2.93	2.56	- 0.21	- 0.12	- 0.08	- 0.07	- 0.31	0.22	0.25	0.30	2.82	- 0.25	- 0.25	- 0.25	2.83	2.84	- 0.25
Well Depth from TOC	26.50	35.50	24.50	25.00	25.00	34.00	22.58	20.50	29.00	41.00	53.00	39.00	46.00	43.00	24.00	24.50	170.00	300.00
Ground Elevation	578.48	578.00	579.51	579.59	582.45	582.70	583.56	582.01	575.58	573.71	575.69	578.56	579.01	582.08	582.80	578.48	578.53	574.21
Bottom of Well EL	554.91	545.43	557.57	554.38	557.33	548.62	560.91	561.20	546.80	532.96	522.99	542.38	532.76	538.83	558.55	556.81	411.37	273.96
Depth to top of screen	16.50	25.50	14.50	15.00	15.00	24.00	12.58	10.50	19.00	31.00	43.00	29.00	36.00	33.00	14.00	14.50	160.00	280.00
Screen Length	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	20.00
Top of screen EL	561.98	552.50	565.01	564.59	567.45	558.70	570.98	571.51	556.58	542.71	532.69	549.56	543.01	549.08	568.80	563.98	418.53	294.21
Bottom of screen EL	551.98	542.50	555.01	554.59	557.45	548.70	560.98	561.51	546.58	532.71	522.69	539.56	533.01	539.08	558.80	553.98	408.53	274.21

Water Level Observations

Sampling Event Date	MW-90							MW-49D							MW-89						
	Depth from TOC	Water Level EL	Field Parameters (Average)					Depth from TOC	Water Level EL	Field Parameters (Average)					Depth from TOC	Water Level EL	Field Parameters (Average)				
			pH	Cond. (mS/cm)	Temp. (°C)	Turb. (NTU)	D.O. (ppm)			pH	Cond. (mS/cm)	Temp. (°C)	Turb. (NTU)	D.O. (ppm)			pH	Cond. (mS/cm)	Temp. (°C)	Turb. (NTU)	D.O. (ppm)
January-13	7.25	574.06						66.92	514.45						281.73	292.23					
February-13	7.19	574.12						64.55	516.82						283.42	290.54					
March-13	8.05	573.26						64.11	517.26						280.79	293.17					
April-13	8.10	573.21	7.05	568	17.0	4.2	0.5	59.14	522.23	7.24	1286	21.6	1.8	2.6	292.00	281.96					
May-13	5.20	576.11						85.34	496.03						291.25	282.71					
June-13	11.34	569.97						84.43	496.94						289.78	284.18					
July-13	11.95	569.36						83.79	497.58						293.47	280.49					
August-13	9.59	571.72	6.9	796	19.6	0.7	0.8	82.89	498.48	7.87	1465	20.0	0.8	0.6	Dry						
September-13	11.40	569.91						124.50	456.87						295.14	278.82					
October-13	12.35	568.96						121.73	459.64						295.93	278.03					
November-13	9.83	571.48	7.21	736	20.0	6.1	2.1	120.23	461.14	7.25	1341	17.2	38.7	1.2	292.47	281.49					
February-14	7.74	573.57	10.28	479	17.0	11.4	2.4	120.81	460.56	7.20	1264	24.1	4.8	2.8	257.33	316.63					
May-14																					

Table 2. Summary of VOCs in Groundwater in SMA 4
Walter Coke - Birmingham, AL



Sample ID		MW49S-040113		MW-49S-080613		MW49S-110613		MW49S-021814		MW49D-032813		MW-49D-080613		MW49D-110613		MW49D-021814		MW50-040213		MW-50-080813		MW50-110713		MW50-021914		MW51-040113		MW-51-080613		MW51-110613		MW51-021814	
Sampling Date	RSL/MCL	04/01/13		08/07/13		11/06/13		02/18/14		03/28/13		08/07/13		11/06/13		02/18/14		04/02/13		08/08/13		11/07/13		02/19/14		04/01/13		08/07/13		11/06/13		02/18/14	
Units	ug/L	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Acetone	12000	1.9	U	2.8	J	ND	U	ND	U	ND	U	6.0	J	5.9	J	ND	U	ND	U	ND	U	2.2	J	ND	U	38	U	21	JB	ND	U	ND	U
2-Butanone (MEK)	NL	2	U	ND	U	ND	U	ND	U	ND	U	2.2	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	40	U	ND	U	ND	U	ND	U
Benzene	5	2.8		3.9		14		5.3		1.7		0.57	J	0.27	J	0.95	J	16		0.35	J	2.6		1.9		8.1	J	9.0		11		7.5	J
Chlorobenzene	100	1.5		2.7		3.5	J	1.9		ND	U	ND	U	ND	U	ND	U	5.8		0.97	J	2.3		2.4		3.4	U	1.2	J	1.4	J	ND	U
Carbon disulfide	720	0.45	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	9	U	ND	U	ND	U	ND	U
Carbon tetrachloride	5	0.19	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	3.8	U	ND	U	ND	U	ND	U
Cyclohexane	13000	0.28	U	ND	U	ND	U	ND	U	0.49	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	5.6	U	ND	U	ND	U	ND	U
1,2-Dibromo-3-	0.2	0.47	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	9.4	U	ND	U	ND	U	ND	U
Bromomethane	7	0.21	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	4.2	U	ND	U	ND	U	ND	U
Bromoform	80	0.19	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	3.8	U	ND	U	ND	U	ND	U
Chloroethane	NL	0.41	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	8.2	U	ND	U	ND	U	ND	U
Chloroform	80	0.16	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	3.2	U	ND	U	ND	U	ND	U
Chlorobromomethane	NL	0.1	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	2	U	ND	U	ND	U	ND	U
Dichlorobromomethane	NL	0.17	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	3.4	U	ND	U	ND	U	ND	U
Chlorodibromomethane	NL	0.17	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	3.4	U	ND	U	ND	U	ND	U
Isopropylbenzene	NL	0.19	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	3.8	U	ND	U	ND	U	ND	U
2-Hexanone	NL	1.7	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	34	U	ND	U	ND	U	ND	U
Chloromethane	190	0.3	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	6	U	ND	U	ND	U	ND	U
Dichlorodifluoromethane	190	0.31	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	6.2	U	ND	U	ND	U	ND	U
trans-1,2-Dichloroethene	100	0.15	U	0.61	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	3.4	J	2.4	J	2.3	J	2.0	J
trans-1,3-Dichloropropene	0.41	0.19	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	3.8	U	ND	U	ND	U	ND	U
Methylene Chloride	5	0.32	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.35	JB	ND	U	ND	U	0.35	JB	17	JB	3.5	JB	ND	U	ND	U
Methyl acetate	16000	1.6	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	33	U	ND	U	ND	U	ND	U
Methyl tert-butyl ether	12	0.25	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	5	U	ND	U	ND	U	ND	U
4-Methyl-2-pentanone (MIBK)	NL	0.98	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	20	U	ND	U	ND	U	ND	U
Methylcyclohexane	NL	0.36	U	ND	U	ND	U	ND	U	0.63	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	7.2	U	ND	U	ND	U	ND	U
Styrene	100	0.17	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	3.4	U	ND	U	ND	U	ND	U
1,1,2,2-Tetrachloroethane	0.066	0.21	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	4.2	U	ND	U	ND	U	ND	U
1,2,3-Trichlorobenzene	5.2	0.21	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	4.2	U	ND	U	ND	U	ND	U
1,2,4-Trichlorobenzene	70	0.21	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	4.2	U	ND	U	ND	U	ND	U
Toluene	1000	0.43	J	0.42	J	ND	U	ND	U	0.51	J	0.47	J	0.19	J	0.31	J	ND	U	0.22	J	ND	U	ND	U*	3.4	U	ND	U	ND	U	ND	U
1,1,1-Trichloroethane	200	0.16	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	3.2	U	ND	U	ND	U	ND	U
1,1,2-Trichloroethane	5	0.27	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	5.4	U	ND	U	ND	U	ND	U
Trichloroethene	5	0.16	U	0.92	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	3.2	U	ND	U	ND	U	ND	U
1,1,2-Trichlorotrifluoroethane	NL	0.42	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	8.4	U	ND	U	ND	U	ND	U
Vinyl chloride	2	4.2		35		190		22		ND	U	0.54	J	0.42	J	0.29	J	7.0		4.0		2.1		ND	U	390		230		290		330	
m-Xylene & p-Xylene	190	0.34	U	ND	U	ND	U	ND	U	ND	U	0.50	J	0.35	J	ND	U	ND	U	ND	U	ND	U	ND	U	6.8	U	ND	U	ND	U	ND	U
o-Xylene	190	0.32	J	ND	U	ND	U	ND	U	0.20	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	3.8	U	ND	U	ND	U	ND	U
Tetrachloroethene	5	0.2	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	4	U	ND	U	ND	U	ND	U
1,2-Dichlorobenzene	600	0.15	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	3	U	ND	U	ND	U	ND	U
1,3-Dichlorobenzene	NL	0.16	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	2.6	U	ND	U	ND	U	ND	U
cis-1,2-Dichloroethene	70	0.92	J	49		110		3.2		ND	U	0.49	J	0.31	J	0.20	J	ND	U	0.92	J	ND	U	ND	U	140		40		49		67	
cis-1,3-Dichloropropene	0.41	0.16	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	3.2	U	ND	U	ND	U	ND	U
1,1-Dichloroethane	2.4	0.22	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	4.4	U	ND	U	ND	U	ND	U
1,1-Dichloroethene	7	0.23	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	4.6	U	ND	U	ND	U	ND	U
1,2-Dichloroethane	5	0.13	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	2.6	U	ND	U	ND	U	ND	U
1,2-Dichloropropane	5	0.18	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	3.6	U	ND	U	ND	U	ND	U
1,4-Dioxane	0.67	57	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	1100	U	ND	U	ND	U	ND	U
Ethylbenzene	700	0.16	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	3.2	U	ND	U	ND	U	ND	U
1,2-Dibromoethane	0.05	0.18	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	3.6	U	ND	U	ND	U	ND	U
Trichlorofluoromethane	1100	0.29	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	5.8	U	ND	U	ND	U	ND	U
1,4-Dichlorobenzene	75	0.16	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	3.2	U	ND	U	ND	U	ND	U

B : Compound was found in the blank and sample.
J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U : Indicates the analyte was analyzed for but not detected.

Table 2. Summary of VOCs in Groundwater in SMA 4
Walter Coke - Birmingham, AL



Sample ID		MW52-032813		MW52-080713		MW52-110613		MW52-021814		MW53-040113		MW53-080713		MW53-110513		MW53-021814		MW54-032613		MW54-080613		MW54-110513		MW54-021814		MW55-032613		MW55-080613		MW55-110613		MW55-021814	
Sampling Date	RSL/MCL	03/28/13		08/07/13		11/06/13		02/18/14		04/01/13		08/07/13		11/05/13		02/18/14		03/26/13		08/06/13		11/05/13		02/18/14		03/26/13		08/06/13		11/06/13		02/18/14	
Units	ug/L	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Acetone	12000	ND	U	2.4	J	ND	U	ND	U	ND	U	1.9	J	3.2	J	ND	U	ND	U	ND	U	170	J	ND	U	ND	U	ND	U	ND	U	ND	U
2-Butanone (MEK)	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Benzene	5	ND	U	ND	U	ND	U	ND	U	3.6		4.9		4.0		3.5		24		ND	U	ND	U	ND	U	35000		55000		55000		42000	
Chlorobenzene	100	4.3		3.4		2.5		1.8		13		8.7		14		12		1200		1400		1900		990		140000		200000		220000		140000	
Carbon disulfide	720	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Carbon tetrachloride	5	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Cyclohexane	13000	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,2-Dibromo-3-Bromomethane	0.2	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Bromomethane	7	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Bromoform	80	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Chloroethane	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Chloroform	80	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Chlorobromomethane	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Dichlorobromomethane	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Chlorodibromomethane	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Isopropylbenzene	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
2-Hexanone	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Chloromethane	190	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Dichlorodifluoromethane	190	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
trans-1,2-Dichloroethene	100	ND	U	ND	U	ND	U	ND	U	0.18	J	ND	U	ND	U	0.16	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
trans-1,3-Dichloropropene	0.41	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Methylene Chloride	5	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	6600	JB	ND	U
Methyl acetate	16000	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Methyl tert-butyl ether	12	ND	U	ND	U	ND	U	ND	U	0.44	J	ND	U	ND	U	0.28	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
4-Methyl-2-pentanone (MIBK)	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Methylcyclohexane	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Styrene	100	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,1,2,2-Tetrachloroethane	0.066	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,2,3-Trichlorobenzene	5.2	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,2,4-Trichlorobenzene	70	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Toluene	1000	ND	U	0.36	J	ND	U	ND	U	0.17	J	0.20	J	ND	U	0.21	J	ND	U	ND	U	ND	U	ND	U	51000		71000		69000		42000	
1,1,1-Trichloroethane	200	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,1,2-Trichloroethane	5	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Trichloroethene	5	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,1,2-Trichlorotrifluoroethane	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Vinyl chloride	2	ND	U	0.16	J	0.22	J	ND	U	3.6		0.67	J	1.7		3.0		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
m-Xylene & p-Xylene	190	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
o-Xylene	190	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Tetrachloroethene	5	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,2-Dichlorobenzene	600	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,3-Dichlorobenzene	NL	ND	U	ND	U	ND	U	ND	U	0.20	J	0.18	J	0.21	J	0.19	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
cis-1,2-Dichloroethene	70	ND	U	ND	U	ND	U	ND	U	0.44	J	0.24	J	ND	U	0.19	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
cis-1,3-Dichloropropene	0.41	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,1-Dichloroethane	2.4	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,1-Dichloroethene	7	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,2-Dichloroethane	5	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,2-Dichloropropane	5	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,4-Dioxane	0.67	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Ethylbenzene	700	ND	U	ND	U	ND	U	ND	U	ND	U	0.18	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,2-Dibromoethane	0.05	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Trichlorofluoromethane	1100	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,4-Dichlorobenzene	75	0.30	J	ND	U	ND	U	ND	U	0.21	J	0.21	J	0.27	J	0.20	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U

B : Compound was found in the blank and sample.
J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U : Indicates the analyte was analyzed for but not detected.

Table 2. Summary of VOCs in Groundwater in SMA 4
Walter Coke - Birmingham, AL



Sample ID		MW56-032713		MW-56-080613		MW56-110613		MW56-021914		MW70-040213		MW70-080813		MW70-110713		MW70 -022014		MW71-040213		MW71-080813		MW71-110713		MW71-022014		MW72-040213		MW72-080813		MW72-110713		MW72-022014	
Sampling Date	RSL/MCL	03/27/13		08/06/13		11/06/13		02/19/14		04/02/13		08/08/13		11/07/13		02/20/14		04/02/13		08/08/13		11/07/13		02/20/14		04/02/13		08/08/13		11/07/13		02/20/14	
Units	ug/L	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Acetone	12000	ND	U	ND	U	ND	U	1600	JB	ND	U	ND	U	4.0	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
2-Butanone (MEK)	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Benzene	5	23000		180		110		14000		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Chlorobenzene	100	7100		4100		4300		3900		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.29	J	ND	U
Carbon disulfide	720	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Carbon tetrachloride	5	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Cyclohexane	13000	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,2-Dibromo-3-Bromomethane	0.2	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Bromoform	7	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Chloroethane	80	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Chloroform	80	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Chlorobromomethane	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Dichlorobromomethane	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Chlorodibromomethane	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Isopropylbenzene	NL	ND	U	29	J	20	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
2-Hexanone	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Chloromethane	190	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Dichlorodifluoromethane	190	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
trans-1,2-Dichloroethene	100	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
trans-1,3-Dichloropropene	0.41	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Methylene Chloride	5	ND	U	ND	U	ND	U	450	JB	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Methyl acetate	16000	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Methyl tert-butyl ether	12	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
4-Methyl-2-pentanone (MIBK)	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Methylcyclohexane	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Styrene	100	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,1,2,2-Tetrachloroethane	0.066	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,2,3-Trichlorobenzene	5.2	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,2,4-Trichlorobenzene	70	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Toluene	1000	150	J	ND	U	ND	U	ND	U*	ND	U	0.21	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,1,1-Trichloroethane	200	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,1,2-Trichloroethane	5	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Trichloroethene	5	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,1,2-Trichlorotrifluoroethane	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Vinyl chloride	2	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.13	J	ND	U	ND	U	ND	U
m-Xylene & p-Xylene	190	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
o-Xylene	190	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Tetrachloroethene	5	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,2-Dichlorobenzene	600	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,3-Dichlorobenzene	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
cis-1,2-Dichloroethene	70	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.29	J	ND	U	0.21	J	0.17	J
cis-1,3-Dichloropropene	0.41	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,1-Dichloroethane	2.4	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,1-Dichloroethene	7	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,2-Dichloroethane	5	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,2-Dichloropropane	5	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,4-Dioxane	0.67	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Ethylbenzene	700	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,2-Dibromoethane	0.05	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Trichlorofluoromethane	1100	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,4-Dichlorobenzene	75	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U

B : Compound was found in the blank and sample.
J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U : Indicates the analyte was analyzed for but not detected.

Table 2. Summary of VOCs in Groundwater in SMA 4
Walter Coke - Birmingham, AL



Sample ID		MW77-032813		MW-77-080613		MW77-110513		MW77-021814		MW78-040213		MW78-080713		MW78-110713		MW78-021914		MW80-032713		MW-80-080613		MW80-110513		MW80-021914		MW81-032613		MW-81-080613		MW81-110513		MW81-021914	
Sampling Date	RSL/MCL	03/28/13		08/06/13		11/05/13		02/18/14		04/02/13		08/07/13		11/07/13		02/19/14		03/27/13		08/06/13		11/05/13		02/19/14		03/26/13		08/06/13		11/05/13		02/19/14	
Units	ug/L	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Acetone	12000	ND	U	2.2	J	3.1	J	ND	U	18		2.4	J	ND	U	2.6	JB	ND	U	2.6	J	ND	U	2.1	JB	ND	U	ND	U	ND	U	54	JB
2-Butanone (MEK)	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Benzene	5	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	2700		550		99		460	
Chlorobenzene	100	ND	U	ND	U	ND	U	ND	U	0.29	J	0.45	J	0.43	J	0.41	J	0.35	J	1.3		ND	U	ND	U	ND	U	6.0	J	6.0		4.7	J
Carbon disulfide	720	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Carbon tetrachloride	5	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Cyclohexane	13000	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	14	J	9.1	J	31		8.6	J
1,2-Dibromo-3-Bromomethane	0.2	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Bromomethane	7	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Bromoform	80	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Chloroethane	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Chloroform	80	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Chlorobromomethane	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Dichlorobromomethane	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Chlorodibromomethane	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Isopropylbenzene	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	82		76		88		65	
2-Hexanone	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Chloromethane	190	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Dichlorodifluoromethane	190	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
trans-1,2-Dichloroethene	100	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
trans-1,3-Dichloropropene	0.41	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Methylene Chloride	5	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.32	JB	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	16	JB
Methyl acetate	16000	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Methyl tert-butyl ether	12	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
4-Methyl-2-pentanone (MIBK)	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Methylcyclohexane	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	15		ND	U
Styrene	100	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,1,2,2-Tetrachloroethane	0.066	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,2,3-Trichlorobenzene	5.2	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,2,4-Trichlorobenzene	70	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Toluene	1000	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U*	ND	U	0.42	J	ND	U	ND	U*	ND	U	ND	U	ND	U	ND	U*
1,1,1-Trichloroethane	200	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,1,2-Trichloroethane	5	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Trichloroethene	5	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,1,2-Trichlorotrifluoroethane	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Vinyl chloride	2	ND	U	ND	U	ND	U	ND	U	0.57	J	0.31	J	0.27	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
m-Xylene & p-Xylene	190	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	2.3	J	ND	U
o-Xylene	190	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Tetrachloroethene	5	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,2-Dichlorobenzene	600	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,3-Dichlorobenzene	NL	ND	U	ND	U	ND	U	ND	U	ND	U	0.29	J	0.30	J	0.27	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
cis-1,2-Dichloroethene	70	ND	U	ND	U	ND	U	ND	U	0.77	J	0.51	J	0.52	J	0.31	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
cis-1,3-Dichloropropene	0.41	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,1-Dichloroethane	2.4	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,1-Dichloroethene	7	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,2-Dichloroethane	5	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,2-Dichloropropane	5	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,4-Dioxane	0.67	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Ethylbenzene	700	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,2-Dibromoethane	0.05	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Trichlorofluoromethane	1100	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,4-Dichlorobenzene	75	ND	U	ND	U	ND	U	ND	U	0.28	J	0.66	J	0.62	J	0.59	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U

B : Compound was found in the blank and sample.
J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U : Indicates the analyte was analyzed for but not detected.

Table 2. Summary of VOCs in Groundwater in SMA 4
Walter Coke - Birmingham, AL



Sample ID		MW89-041813		MW89-021914		MW90-040213		MW-90-080813		MW90-110713		MW90-021914		EFFLUENT-081213		EFFLUEN T-110613		EFFLUEN T-022014	
Sampling Date	RSL/MCL	04/18/13		02/19/14		04/02/13		08/08/13		11/07/13		02/19/14		08/12/13		11/06/13		02/20/14	
Units	ug/L	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Acetone	12000	190		ND	U	20		ND	U	ND	U	ND	U	ND	U	ND	U	48	J
2-Butanone (MEK)	NL	18		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Benzene	5	6.9		4.0		ND	U	ND	U	ND	U	ND	U	4000		1000		310	
Chlorobenzene	100	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	1400		210		170	
Carbon disulfide	720	2.5		0.79	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Carbon tetrachloride	5	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Cyclohexane	13000	36		27		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,2-Dibromo-3-Bromomethane	0.2	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Bromomethane	7	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Bromoform	80	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Chloroethane	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Chloroform	80	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Chlorobromomethane	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Dichlorobromomethane	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Chlorodibromomethane	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Isopropylbenzene	NL	0.84	J	0.40	J	ND	U	ND	U	ND	U	ND	U	ND	U	5.3	J	ND	U
2-Hexanone	NL	6.2		2.4	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Chloromethane	190	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Dichlorodifluoromethane	190	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
trans-1,2-Dichloroethene	100	ND	U	ND	U	ND	U	0.20	J	0.27	J	ND	U	ND	U	ND	U	ND	U
trans-1,3-Dichloropropene	0.41	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Methylene Chloride	5	0.62	J	0.41	JB	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Methyl acetate	16000	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Methyl tert-butyl ether	12	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
4-Methyl-2-pentanone (MIBK)	NL	3.6	J	1.8	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Methylcyclohexane	NL	19		16		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Styrene	100	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,1,2,2-Tetrachloroethane	0.066	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,2,3-Trichlorobenzene	5.2	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,2,4-Trichlorobenzene	70	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	25		67	
Toluene	1000	32		21	*	ND	U	0.19	J	ND	U	ND	U *	12000		1300		160	
1,1,1-Trichloroethane	200	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,1,2-Trichloroethane	5	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Trichloroethene	5	ND	U	ND	U	ND	U	0.29	J	0.23	J	ND	U	ND	U	ND	U	ND	U
1,1,2-Trichlorotrifluoroethane	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Vinyl chloride	2	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	50		20	
m-Xylene & p-Xylene	190	47		23		ND	U	ND	U	ND	U	ND	U	ND	U	370		530	
o-Xylene	190	26		12		ND	U	ND	U	ND	U	ND	U	390	J	150		250	
Tetrachloroethene	5	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,2-Dichlorobenzene	600	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,3-Dichlorobenzene	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	12	J	25	
cis-1,2-Dichloroethene	70	ND	U	ND	U	1.0		3.6		4.2		0.68	J	ND	U	21	J	14	
cis-1,3-Dichloropropene	0.41	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,1-Dichloroethane	2.4	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,1-Dichloroethene	7	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,2-Dichloroethane	5	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,2-Dichloropropane	5	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,4-Dioxane	0.67	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Ethylbenzene	700	8.8		4.7		ND	U	ND	U	ND	U	ND	U	ND	U	280		190	
1,2-Dibromoethane	0.05	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Trichlorofluoromethane	1100	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,4-Dichlorobenzene	75	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	20	J	31	

B : Compound was found in the blank and sample.
J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U : Indicates the analyte was analyzed for but not detected.

Table 3. Summary of SVOCs in Groundwater in SMA 4
Walter Coke - Birmingham, AL



Sample ID		MW53-080713		MW53-110513		MW53-021814		MW54-032613		MW54-080613		MW54-110513		MW54-021814		MW55-032613		MW55-080613		MW55-110613		MW55-021814		MW55-032713		MW56-032713		MW56-080613		MW56-110613		MW56-021914		MW70-040213		MW70-080813		MW70-110713		MW70 -022014		MW71-040213		MW71-080813					
Sampling Date	RSL/MCL	08/07/13		11/05/13		02/18/14		03/26/13		08/06/13		11/05/13		02/18/14		03/26/13		08/06/13		11/06/13		02/18/14		03/27/13		08/06/13		11/06/13		02/19/14		04/02/13		08/08/13		11/07/13		02/20/14		04/02/13		08/08/13							
Units	ug/L	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L					
2,2'-oxybis[1-		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U				
2,4,5-Trichlorophenol	890	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U				
2,4,6-Trichlorophenol	3.5	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U				
2,4-Dimethylphenol	270	ND	U	ND	U	ND	U	ND	U	1.1	J	ND	U	ND	U	1.6	J	1.6	J	1.8	J	1.1	J	1.5	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U		
2,4-Dinitrotoluene	0.2	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U				
2,4-Dinitrophenol	30	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U				
2,4-Dichlorophenol	35	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U				
2-Chlorophenol	71	ND	U	ND	U	ND	U	ND	U	6.8	J	2.5	J	ND	U	33		25		44		39		2.6	J	2.1	J	2.1	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U		
2-Chloronaphthalene	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U		
2-Nitrophenol	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U		
2-Methylphenol	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	64		57		47		28		2.6	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U		
2-Nitroaniline	150	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U		
3-Nitroaniline	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U		
4,6-Dinitro-2-methylphenol	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U		
4-Bromophenyl phenyl	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U		
4-Chloro-3-methylphenol	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U		
4-Chloroaniline	0.32	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U		
4-Chlorophenyl phenyl	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U		
4-Nitrophenol	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U		
4-Nitroaniline	3.3	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U		
Acenaphthene	400	12		11		9.6		13		13		15		12		0.70	J	0.81	J	0.71	J	0.73	J	5.4		6.0		5.1		5.1	J	ND	U	ND	U	0.35	J	ND	U	ND	U	ND	U	ND	U	ND	U		
Benzo[k]fluoranthene	0.29	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U		
Anthracene	1300	ND	U	ND	U	ND	U	ND	U	0.42	J	0.40	J	ND	U	ND	U	ND	U	ND	U	ND	U	1.3	J	0.84	J	ND	U	ND	U	ND	U	ND	U	0.40	J	ND	U	ND	U	ND	U	ND	U	ND	U		
Acetophenone	1500	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	4.6	J	5.2	J	5.1	J	ND	U	1.0	J	ND	U	ND	U	ND	U	ND	U	ND	U	0.42	J	ND	U	ND	U	ND	U	ND	U	ND	U		
Acenaphthylene	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U		
Benzo[a]anthracene	0.029	ND	U	ND	U	ND	U	0.64	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U		
1,2,4-Trichlorobenzene	70	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	450		500		410		430		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U		
Benzo[b]fluoranthene	0.029	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U		
Benzo[g,h,i]perylene	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U		
Benzo[a]pyrene	0.02	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U		
Benzyl alcohol	1500	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	2.4	J	1.7	J	2.4	J	1.6	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.93	J	ND	U	ND	U	ND	U	ND	U	ND	U		
Bis(2-	46	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U		
Bis(2-chloroethyl)ether	0.012	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	1.1	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U		
Bis(2-ethylhexyl) phthalate	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U		
Butyl benzyl phthalate	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U		
Carbazole	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	1.5	J	1.6	J	1.3	J	1.1	J	1.4	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Chrysene	2.9	ND	U	ND	U	ND	U	0.61	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.98	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U		
1,2-Dichlorobenzene	600	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	3.2	J	3.5	J	3.1																													

Concentrations in excess of the RSL/MCL are highlighted in red.

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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Table 3. Summary of SVOCs in Groundwater in SMA 4
Walter Coke - Birmingham, AL



Sample ID		MW81-021914		MW89-041813		MW90-040213		MW-90-080813		MW90-110713		MW90-021914		EFFLUENT-081213		EFFLUEN T-110613		EFFLUEN T-022014	
Sampling Date	RSL/MCL	02/19/14		04/18/13		04/02/13		08/08/13		11/07/13		02/19/14		08/12/13		11/06/13		02/20/14	
Units	ug/L	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
2,2'-oxybis[1-		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
2,4,5-Trichlorophenol	890	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
2,4,6-Trichlorophenol	3.5	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
2,4-Dimethylphenol	270	ND	U	7.9	J	ND	U	ND	U	ND	U	ND	U	1.1	J	8.1	J	32	
2,4-Dinitrotoluene	0.2	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
2,4-Dinitrophenol	30	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
2,4-Dichlorophenol	35	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
2-Chlorophenol	71	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	4.0	J	3.9	J	8.7	J
2-Chloronaphthalene	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
2-Nitrophenol	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
2-Methylphenol	NL	ND	U	5.3	J	ND	U	ND	U	ND	U	ND	U	160		140		15	
2-Nitroaniline	150	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
3-Nitroaniline	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
4,6-Dinitro-2-methylphenol	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
4-Bromophenyl phenyl	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
4-Chloro-3-methylphenol	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
4-Chloroaniline	0.32	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
4-Chlorophenyl phenyl	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
4-Nitrophenol	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
4-Nitroaniline	3.3	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Acenaphthene	400	12		ND	U	ND	U	ND	U	ND	U	ND	U	1.2	J	0.64	J	0.37	J
Benzo[k]fluoranthene	0.29	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Anthracene	1300	0.70	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Acetophenone	1500	0.26	J	3.3	J	ND	U	ND	U	ND	U	ND	U	1.8	J	0.64	J	0.56	J
Acenaphthylene	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Benzo[a]anthracene	0.029	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,2,4-Trichlorobenzene	70	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	9.2		25		54	
Benzo[b]fluoranthene	0.029	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Benzo[g,h,i]perylene	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Benzo[a]pyrene	0.02	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Benzyl alcohol	1500	ND	U	2.4	J	ND	U	ND	U	ND	U	ND	U	6.3	J	0.69	J	0.52	J
Bis(2-	46	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Bis(2-chloroethyl)ether	0.012	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Bis(2-ethylhexyl) phthalate	NL	ND	U	0.72	J	ND	U	ND	U	ND	U	ND	U	0.73	J	1.0	J	ND	U
Butyl benzyl phthalate	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Carbazole	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.64	J	ND	U	ND	U
Chrysene	2.9	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,2-Dichlorobenzene	600	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.29	J	0.85	J	1.2	J
Dibenz(a,h)anthracene	0.0029	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,3-Dichlorobenzene	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	2.7	J	11		20	
Di-n-butyl phthalate	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Di-n-octyl phthalate	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Dibenzofuran	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.93	J	0.41	J	ND	U
Diethyl phthalate	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Dimethyl phthalate	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Fluoranthene	630	0.74	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Fluorene	220	6.8		ND	U	ND	U	ND	U	ND	U	ND	U	1.5	J	0.82	J	0.37	J
Hexachlorobenzene	1	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,4-Dioxane	0.67	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	1.8	J	ND	U	ND	U
Hexachlorobutadiene	0.26	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Hexachlorocyclopentadiene	50	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Hexachloroethane	0.79	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Indeno[1,2,3-cd]pyrene	0.029	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Isophorone	67	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
N-Nitrosodi-n-propylamine	9300	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
N-Nitrosodiphenylamine	10	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Pentachlorophenol	1	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Phenanthrene	NL	0.37	J	ND	U	ND	U	ND	U	ND	U	ND	U	0.27	J	ND	U	ND	U
Phenol	4500	4.0	J	20		ND	U	ND	U	ND	U	ND	U	14000		23		44	
Pyrene	87	0.39	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
1,4-Dichlorobenzene	75	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	3.8		15		22	
Naphthalene	0.14	0.45	J	0.40	J	ND	U	ND	U	ND	U	ND	U	24		3.9		2.8	J
2-Methylnaphthalene	27	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.31	J	ND	U	ND	U
Nitrobenzene	0.12	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	1.7	J	ND	U
3,3'-Dichlorobenzidine	0.11	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
3 & 4 Methylphenol	NL	0.29	J	6.0	J	ND	U	ND	U	ND	U	ND	U	100		11		6.3	J

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Table 4. Summary of SVOCs - SIM in Groundwater in SMA 4
Walter Coke - Birmingham, AL

Sample ID		MW49S-040113		MW-49S-080613		MW49S-110613		MW49S-021814		MW49D-032813		MW-49D-080613		MW49D-110613		MW49D-021814		MW50-040213	
Sampling Date	RSL/MCL	04/01/13		08/07/13		11/06/13		02/18/14		03/28/13		08/07/13		11/06/13		02/18/14		04/02/13	
Units	ug/L	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Acenaphthene	400	0.03	J	0.042	J	0.092	J	0.032	J	0.016	J	ND	U	ND	U	ND	U	ND	U
Benzo[k]fluoranthene	0.29	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.031	J	ND	U	ND	U
Anthracene	1300	0.024	J	0.014	J	0.018	J	ND	U	ND	U	ND	U	0.023	J	ND	U	ND	U
Acenaphthylene	NL	ND	U	ND	U	0.18		ND	U	ND	U	0.016	J	0.16		ND	U	ND	U
Benzo[a]anthracene	0.029	0.0038	J	ND	U	ND	U	ND	U	ND	U	0.0037	J	0.045	JB	ND	U	ND	U
Benzo[b]fluoranthene	0.029	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.097		ND	U	ND	U
Benzo[g,h,i]perylene	NL	ND	U	ND	U	ND	U	ND	U	ND	U	0.0041	J	0.059	J	ND	U	ND	U
Benzo[a]pyrene	0.02	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.067	J	ND	U	ND	U
Chrysene	2.9	ND	U	ND	U	ND	U	ND	U	ND	U	0.0048	J	0.046	JB	ND	U	ND	U
Dibenz(a,h)anthracen	0.0029	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.017	J	ND	U	ND	U
Fluoranthene	630	0.012	JB	0.0049	J	ND	U	ND	U	0.0059	JB	ND	U	0.059	JB	ND	U	0.005	JB
Fluorene	220	0.024	J	0.018	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Indeno[1,2,3-	0.029	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.048	J	ND	U	ND	U
Phenanthrene	NL	0.023	JB	0.01	J	0.017	JB	ND	U	0.016	JB	ND	U	0.043	JB	ND	U	0.013	JB
Pyrene	87	0.009	J	ND	U	ND	U	ND	U	ND	U	ND	U	0.054	J	ND	U	ND	U
Naphthalene	0.14	0.20		0.037	J	0.052	J	ND	U	0.36	B	1.1		0.43		0.57		0.068	J
2-Methylnaphthalene	27	0.0096	JB	ND	U	ND	U	ND	U	0.013	JB	0.0056	J	0.02	J	ND	U	0.0053	JB

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Table 4. Summary of SVOCs - SIM in Groundwater in SMA 4
Walter Coke - Birmingham, AL

Sample ID		MW-50-080813		MW50-110713		MW50-021914		MW51-040113		MW-51-080613		MW51-110613		MW51-021814		MW52-032813		MW52-080713	
Sampling Date	RSL/MCL	08/08/13		11/07/13		02/19/14		04/01/13		08/07/13		11/06/13		02/18/14		03/28/13		08/07/13	
Units	ug/L	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Acenaphthene	400	ND	U	ND	U	ND	U	0.64		1.1		1.1		0.84		0.61		0.63	
Benzo[k]fluoranthene	0.29	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Anthracene	1300	ND	U	ND	U	ND	U	0.051	J	0.063	J	ND	U	0.034	J	0.033	J	0.025	J
Acenaphthylene	NL	ND	U	0.02	J	ND	U	0.034	J	50	J	0.42		0.038	J	ND	U	ND	U
Benzo[a]anthracene	0.029	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Benzo[b]fluoranthene	0.029	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Benzo[g,h,i]perylene	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Benzo[a]pyrene	0.02	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Chrysene	2.9	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Dibenz(a,h)anthracen	0.0029	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Fluoranthene	630	ND	U	ND	U	ND	U	0.032	JB	0.044	J	0.076	JB	ND	U	0.0068	JB	ND	U
Fluorene	220	ND	U	ND	U	ND	U	0.024	J	0.058	J	0.074	J	0.024	J	ND	U	ND	U
Indeno[1,2,3-	0.029	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Phenanthrene	NL	ND	U	ND	U	ND	U	0.035	JB	0.013	J	ND	U	ND	U	0.012	JB	ND	U
Pyrene	87	ND	U	0.015	J	ND	U	0.018	J	0.022	J	0.049	J	ND	U	ND	U	ND	U
Naphthalene	0.14	0.037	J	0.037	J	ND	U	0.46		0.14		0.032	J	ND	U	0.029	JB	0.031	J
2-Methylnaphthalene	27	ND	U	ND	U	ND	U	0.011	JB	ND	U	0.011	J	ND	U	ND	U	ND	U

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Table 4. Summary of SVOCs - SIM in Groundwater in SMA 4
Walter Coke - Birmingham, AL

Sample ID		MW52- 110613		MW52- 021814		MW53- 040113		MW53- 080713		MW53- 110513		MW53- 021814		MW54- 032613		MW-54- 080613		MW54- 110513	
Sampling Date	RSL/MCL	11/06/13		02/18/14		04/01/13		08/07/13		11/05/13		02/18/14		03/26/13		08/06/13		11/05/13	
Units	ug/L	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Acenaphthene	400	0.93		0.38		11		9.9		11		9.5		11		12		15	
Benzo[k]fluoranthene	0.29	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.081	J	0.053	J	0.028	J
Anthracene	1300	ND	U	ND	U	0.11		0.086	J	ND	U	ND	U	0.35		0.32		ND	U
Acenaphthylene	NL	0.078	J	ND	U	0.22		0.19		0.15		ND	U	0.12		0.078	J	0.064	J
Benzo[a]anthracene	0.029	ND	U	ND	U	0.007	J	0.006	J	ND	U	ND	U	0.34		0.26		0.22	
Benzo[b]fluoranthene	0.029	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.19		0.14		0.11	
Benzo[g,h,i]perylene	NL	ND	U	ND	U	ND	U	0.0034	J	ND	U	ND	U	0.061	JB	0.049	J	0.032	J
Benzo[a]pyrene	0.02	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.13		0.083	J	0.065	J
Chrysene	2.9	ND	U	ND	U	0.0067	J	0.0043	J	ND	U	ND	U	0.32		0.24		0.14	
Dibenz(a,h)anthracen	0.0029	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.017	J	0.015	J	0.01	J
Fluoranthene	630	0.094	JB	ND	U	0.25	B	0.28		0.26		0.23		2.1	B	1.9		1.5	
Fluorene	220	ND	U	ND	U	1.7		1.6		1.3		1.1		0.65		0.45		0.22	
Indeno[1,2,3-	0.029	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.072	J	0.051	J	0.03	J
Phenanthrene	NL	ND	U	ND	U	0.036	JB	0.011	J	ND	U	ND	U	0.35	B	0.22		0.095	J
Pyrene	87	ND	U	ND	U	0.11		0.13		0.12		0.099		1.3		1.2		1.0	
Naphthalene	0.14	0.065	J	ND	U	0.034	J	0.029	J	0.027	J	ND	U	0.18	B	0.27		0.33	
2-Methylnaphthalene	27	ND	U	ND	U	0.0091	JB	ND	U	ND	U	ND	U	0.085	JB	0.055	J	0.021	J

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Table 4. Summary of SVOCs - SIM in Groundwater in SMA 4
Walter Coke - Birmingham, AL

Sample ID		MW54- 021814		MW55- 032613		MW-55- 080613		MW55- 110613		MW55- 021814		MW56- 032713		MW-56- 080613		MW56- 110613		MW56- 021914	
Sampling Date	RSL/MCL	02/18/14		03/26/13		08/06/13		11/06/13		02/18/14		03/27/13		08/06/13		11/06/13		02/19/14	
Units	ug/L	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Acenaphthene	400	14		0.65		0.73		0.57		0.69		5.1		6.1		4.7		4.9	
Benzo[k]fluoranthene	0.29	0.023	J	0.013	J	0.023	J	0.0094	J	0.015	J	0.011	J	0.017	J	ND	U	0.18	
Anthracene	1300	0.22		0.18		0.29		0.22		0.25		1.2		0.76		0.2		0.59	
Acenaphthylene	NL	ND	U	0.042	J	0.066	J	0.14		0.062	J	0.074	J	0.076	J	0.1		0.16	
Benzo[a]anthracene	0.029	0.22		0.052	J	0.063	J	0.036	JB	0.048	J	0.089	J	0.1		0.033	JB	0.53	
Benzo[b]fluoranthene	0.029	0.056	J	0.032	J	0.044	J	0.026	J	0.028	J	0.022	J	0.052	J	0.033	J	0.65	
Benzo[g,h,i]perylene	NL	0.0074	J	0.013	JB	0.016	J	0.0082	J	0.010	J	0.0084	JB	0.035	J	0.026	J	0.51	
Benzo[a]pyrene	0.02	0.028	J	0.026	J	0.033	J	0.019	J	0.021	J	0.017	J	0.041	J	0.028	J	0.50	
Chrysene	2.9	0.16		0.05	J	0.06	J	0.036	JB	0.048	J	0.096		0.13		0.055	JB	1.0	
Dibenz(a,h)anthracen	0.0029	ND	U	0.0054	J	0.0074	J	ND	U	ND	U	ND	U	0.01	J	0.0083	J	0.20	
Fluoranthene	630	2.0		0.53	B	0.53		0.37	B	0.47		2.3	B	1.8		0.46	B	1.4	
Fluorene	220	0.22		1.1		1.3		1		1.2		9.9		10		7.2		7.0	
Indeno[1,2,3-	0.029	ND	U	0.015	J	0.02	J	ND	U	ND	U	ND	U	0.021	J	ND	U	0.32	
Phenanthrene	NL	0.058	J	1	B	1.2		0.89	B	1.1		1.8	B	0.34		0.15	B	1.2	
Pyrene	87	1.3		0.29		0.29		0.2		0.24		1.2		0.97		0.25		1.0	
Naphthalene	0.14	0.039	J	22	B	33		27		22		22	B	3.9		2.3		8.1	
2-Methylnaphthalene	27	0.015	J	1	B	1.3		0.96		1.1		0.72	B	0.12		0.087	J	0.63	

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Table 4. Summary of SVOCs - SIM in Groundwater in SMA 4
Walter Coke - Birmingham, AL

Sample ID		MW70-040213		MW70-080813		MW70-110713		MW70-022014		MW71-040213		MW71-080813		MW71-110713		MW71-022014		MW72-040213	
Sampling Date	RSL/MCL	04/02/13		08/08/13		11/07/13		02/20/14		04/02/13		08/08/13		11/07/13		02/20/14		04/02/13	
Units	ug/L	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Acenaphthene	400	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Benzo[k]fluoranthene	0.29	0.0067	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.098		0.02	J
Anthracene	1300	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Acenaphthylene	NL	ND	U	ND	U	0.0012	J	ND	U	ND	U	ND	U	0.017	J	ND	U	ND	U
Benzo[a]anthracene	0.029	0.0052	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.098		0.0095	J
Benzo[b]fluoranthene	0.029	0.0083	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.10		0.02	J
Benzo[g,h,i]perylene	NL	0.012	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.10		0.024	J
Benzo[a]pyrene	0.02	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.055	J	0.0071	J
Chrysene	2.9	0.0068	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.11		0.21	J
Dibenz(a,h)anthracene	0.0029	0.0052	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.11		0.013	J
Fluoranthene	630	0.0071	JB	ND	U	ND	U	ND	U	0.005	JB	ND	U	ND	U	0.10		0.011	JB
Fluorene	220	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Indeno[1,2,3-	0.029	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.095		0.026	J
Phenanthrene	NL	0.014	JB	ND	U	ND	U	ND	U	0.015	JB	ND	U	ND	U	ND	U	0.018	JB
Pyrene	87	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.10		0.0087	J
Naphthalene	0.14	0.0069	J	0.0095	J	0.0011	J	ND	U	0.037	J	0.011	J	0.013	J	ND	U	0.024	J
2-Methylnaphthalene	27	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U

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Table 4. Summary of SVOCs - SIM in Groundwater in SMA 4
Walter Coke - Birmingham, AL

Sample ID		MW72-080813		MW72-110713		MW72-022014		MW77-032813		MW-77-080613		MW77-110513		MW77-021814		MW78-040213		MW78-080713	
Sampling Date	RSL/MCL	08/08/13		11/07/13		02/20/14		03/28/13		08/06/13		11/05/13		02/18/14		04/02/13		08/07/13	
Units	ug/L	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Acenaphthene	400	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Benzo[k]fluoranthene	0.29	ND	U	0.015	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Anthracene	1300	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Acenaphthylene	NL	ND	U	0.019	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Benzo[a]anthracene	0.029	ND	U	0.013	JB	ND	U	0.0056	J	ND	U	ND	U	ND	U	ND	U	ND	U
Benzo[b]fluoranthene	0.029	0.0042	J	0.017	J	ND	U	0.0061	J	ND	U	ND	U	ND	U	ND	U	ND	U
Benzo[g,h,i]perylene	NL	ND	U	0.017	J	ND	U	0.0056	JB	ND	U	ND	U	ND	U	ND	U	ND	U
Benzo[a]pyrene	0.02	ND	U	0.011	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Chrysene	2.9	ND	U	0.014	JB	ND	U	0.0053	J	ND	U	ND	U	ND	U	ND	U	ND	U
Dibenz(a,h)anthracen	0.0029	ND	U	0.016	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Fluoranthene	630	ND	U	0.01	JB	ND	U	0.0096	JB	0.0068	J	ND	U	ND	U	0.0051	JB	ND	U
Fluorene	220	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Indeno[1,2,3-	0.029	ND	U	0.017	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Phenanthrene	NL	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.016	JB	ND	U
Pyrene	87	ND	U	0.0084	J	ND	U	0.0088	J	ND	U	ND	U	ND	U	ND	U	ND	U
Naphthalene	0.14	0.47		0.44		0.15		0.01	JB	0.065	J	0.021	J	ND	U	0.18		0.099	
2-Methylnaphthalene	27	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U

Concentrations in excess of the RSL/MCL are highlighted in red.

B : Compound was found in the blank and sample.

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

U : Indicates the analyte was analyzed for but not detected.

Table 4. Summary of SVOCs - SIM in Groundwater in SMA 4
Walter Coke - Birmingham, AL

Sample ID		MW78-110713		MW78-021914		MW80-032713		MW-80-080613		MW80-110513		MW80-021914		MW81-032613		MW-81-080613		MW81-110513	
Sampling Date	RSL/MCL	11/07/13		02/19/14		03/27/13		08/06/13		11/05/13		02/19/14		03/26/13		08/06/13		11/05/13	
Units	ug/L	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Acenaphthene	400	ND	U	ND	U	0.26		0.32		0.51		0.40		13		17		18	
Benzo[k]fluoranthene	0.29	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.0053	J	ND	U	ND	U
Anthracene	1300	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.99		1		0.99	
Acenaphthylene	NL	0.027	J	ND	U	ND	U	ND	U	ND	U	ND	U	0.15		0.084	J	0.049	J
Benzo[a]anthracene	0.029	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.023	J	0.016	J	0.016	J
Benzo[b]fluoranthene	0.029	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.014	J	0.0098	J	ND	U
Benzo[g,h,i]perylene	NL	ND	U	ND	U	ND	U	ND	U	ND	U	0.0048	J	0.0069	J	0.0039	J	ND	U
Benzo[a]pyrene	0.02	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.011	J	0.0052	J	ND	U
Chrysene	2.9	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.022	J	0.011	J	0.011	J
Dibenz(a,h)anthracen	0.0029	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Fluoranthene	630	ND	U	ND	U	0.0051	JB	ND	U	ND	U	ND	U	0.84	B	0.93		0.92	
Fluorene	220	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	7.7		9.6		11	
Indeno[1,2,3-	0.029	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Phenanthrene	NL	ND	U	ND	U	0.01	JB	ND	U	ND	U	ND	U	1.9	B	1.4		2.8	
Pyrene	87	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.39		0.42		0.42	
Naphthalene	0.14	0.18		ND	U	0.21	B	0.0088	J	ND	U	ND	U	1.0	B	0.62		0.46	
2-Methylnaphthalene	27	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.17	B	0.2		1.5	

Concentrations in excess of the RSL/MCL are highlighted in red.

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J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

U : Indicates the analyte was analyzed for but not detected.

Table 4. Summary of SVOCs - SIM in Groundwater in SMA 4
Walter Coke - Birmingham, AL

Sample ID		MW81- 021914		MW89- 041813		MW90- 040213		MW-90- 080813		MW90- 110713		MW90- 021914		EFFLUEN T-081213		EFFLUEN T-110613		EFFLUEN T-022014	
Sampling Date	RSL/MCL	02/19/14		04/18/13		04/02/13		08/08/13		11/07/13		02/19/14		08/12/13		11/06/13		02/20/14	
Units	ug/L	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Acenaphthene	400	10		ND	U	ND	U	ND	U	ND	U	ND	U	1		0.57		0.38	
Benzo[k]fluoranthene	0.29	ND	U	ND	U	ND	U	ND	U	ND	U	0.0071	J	ND	U	ND	U	0.021	J
Anthracene	1300	0.56		ND	U	ND	U	ND	U	ND	U	ND	U	0.06	J	0.031	J	0.015	J
Acenaphthylene	NL	ND	U	ND	U	ND	U	ND	U	0.017	J	ND	U	0.035	J	0.057	J	ND	U
Benzo[a]anthracene	0.029	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.0054	J	ND	U	ND	U
Benzo[b]fluoranthene	0.029	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Benzo[g,h,i]perylene	NL	ND	U	0.0091	J	ND	U	ND	U	ND	U	0.0052	J	ND	U	ND	U	ND	U
Benzo[a]pyrene	0.02	ND	U	0.0068	J	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Chrysene	2.9	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.0056	J	ND	U	ND	U
Dibenz(a,h)anthracen	0.0029	ND	U	ND	U	ND	U	ND	U	ND	U	0.0069	J	ND	U	ND	U	ND	U
Fluoranthene	630	0.64		0.024	J	ND	U	ND	U	ND	U	ND	U	0.1		0.047	J	0.033	J
Fluorene	220	5.6		0.052	J	ND	U	ND	U	ND	U	ND	U	1.2		0.62		0.39	
Indeno[1,2,3-	0.029	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Phenanthrene	NL	0.31		0.083	J	0.0093	J	ND	U	ND	U	ND	U	0.17		0.071	J	0.058	J
Pyrene	87	0.28		0.025	J	ND	U	ND	U	ND	U	ND	U	0.049	J	0.024	J	0.022	J
Naphthalene	0.14	0.37		0.30		0.011	J	0.016	J	0.015	J	ND	U	22		3.9		3.0	
2-Methylnaphthalene	27	0.064	J	0.16		ND	U	ND	U	ND	U	ND	U	0.23		0.088	J	0.084	J

Concentrations in excess of the RSL/MCL are highlighted in red.

B : Compound was found in the blank and sample.

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

U : Indicates the analyte was analyzed for but not detected.

PARAMETER		VALUE
Benzene		
Concentration (µg/L)		310
Estimated Total Gallons		93,112
Lbs Removed per Gallon		0.000002585
Lbs Removed		0.24

PARAMETER		VALUE
1,2,4-Trichlorobenzene		
Concentration (µg/L)		67
Estimated Total Gallons		93,112
Lbs Removed per Gallon		0.000000559
Lbs Removed		0.05

PARAMETER		VALUE
Vinyl Chloride		
Concentration (µg/L)		20
Estimated Total Gallons		93,112
Lbs Removed per Gallon		0.000000167
Lbs Removed		0.016

PARAMETER		VALUE
o-Xylene		
Concentration (µg/L)		250
Estimated Total Gallons		93,112
Lbs Removed per Gallon		0.000002084
Lbs Removed		0.194

PARAMETER		VALUE
2-Methylphenol		
Concentration (µg/L)		15
Estimated Total Gallons		93,112
Lbs Removed per Gallon		0.000000125
Lbs Removed		0.012

PARAMETER		VALUE
Phenol		
Concentration (µg/L)		44
Estimated Total Gallons		93,112
Lbs Removed per Gallon		0.000000367
Lbs Removed		0.034

PARAMETER		VALUE
Naphthalene		
Concentration (µg/L)		3.0
Estimated Total Gallons		93,112
Lbs Removed per Gallon		0.000000025
Lbs Removed		0.002

PARAMETER		VALUE
Acenaphthene		
Concentration (µg/L)		0.38
Estimated Total Gallons		93,112
Lbs Removed per Gallon		0.000000003
Lbs Removed		0.0003

PARAMETER		VALUE
Chlorobenzene		
Concentration (µg/L)		170
Estimated Total Gallons		93,112
Lbs Removed per Gallon		0.000001417
Lbs Removed		0.1320

PARAMETER		VALUE
Toluene		
Concentration (µg/L)		160
Estimated Total Gallons		93,112
Lbs Removed per Gallon		0.000001334
Lbs Removed		0.124

PARAMETER		VALUE
m-Xylene & p-Xylene		
Concentration (µg/L)		530
Estimated Total Gallons		93,112
Lbs Removed per Gallon		0.000000419
Lbs Removed		0.411

PARAMETER		VALUE
Ethylbenzene		
Concentration (µg/L)		190
Estimated Total Gallons		93,112
Lbs Removed per Gallon		0.000001584
Lbs Removed		0.148

PARAMETER		VALUE
1,3-Dichlorobenzene		
Concentration (µg/L)		25
Estimated Total Gallons		93,112
Lbs Removed per Gallon		0.000000208
Lbs Removed		0.019

PARAMETER		VALUE
1,4-Dichlorobenzene		
Concentration (µg/L)		31
Estimated Total Gallons		93,112
Lbs Removed per Gallon		0.000000258
Lbs Removed		0.024

PARAMETER		VALUE
cis-1,2-Dichloroethene		
Concentration (µg/L)		14
Estimated Total Gallons		93,112
Lbs Removed per Gallon		0.000000117
Lbs Removed		0.011

PARAMETER		VALUE
Fluorene		
Concentration (µg/L)		0.39
Estimated Total Gallons		93,112
Lbs Removed per Gallon		0.000000003
Lbs Removed		0.0003

PARAMETER		VALUE
2,4-Dimethylphenol		
Concentration (µg/L)		32
Estimated Total Gallons		93,112
Lbs Removed per Gallon		0.000000267
Lbs Removed		0.0248

Notes:

Effluent Sample Collected on 11/06/2013

1 gallon of gasoline = 6.15 pounds per gallon (lbs/gal)

1 Pound = 454 grams

1 gram = 1,000,000 µgrams

1 Liter = 0.26417 Gallons

1 gallon = 7.48 cubic feet

Total Estimated Mass (lbs) VOCs and SVOCs Removed

1.45

TO CALCULATE TOTAL POUNDS REMOVED:

$$\text{Total Lbs Removed} = \frac{\text{Conc. (}\mu\text{ gram)}}{\text{Liter}} \times \frac{1 \text{ lb}}{454 \text{ gram}} \times \frac{1 \text{ gram}}{10^6 \mu\text{ gram}} \times \frac{1 \text{ Liter}}{0.26417 \text{ Gal}} \times \text{Total Gallons}$$



Project Manager:	TWR
Drawn By:	ECR
Checked By:	TWR
Approved By:	TWR

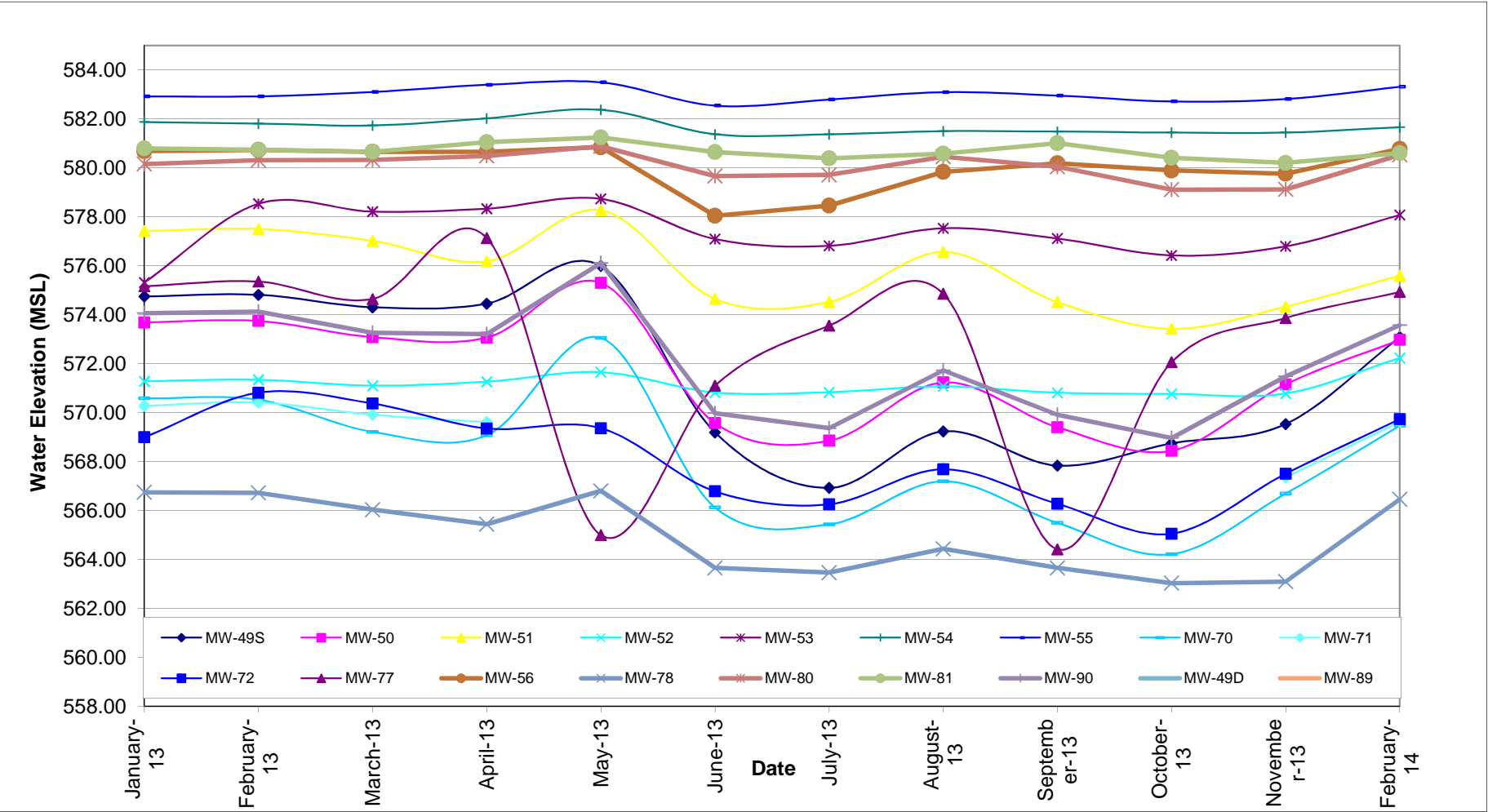
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Date:	January 2014

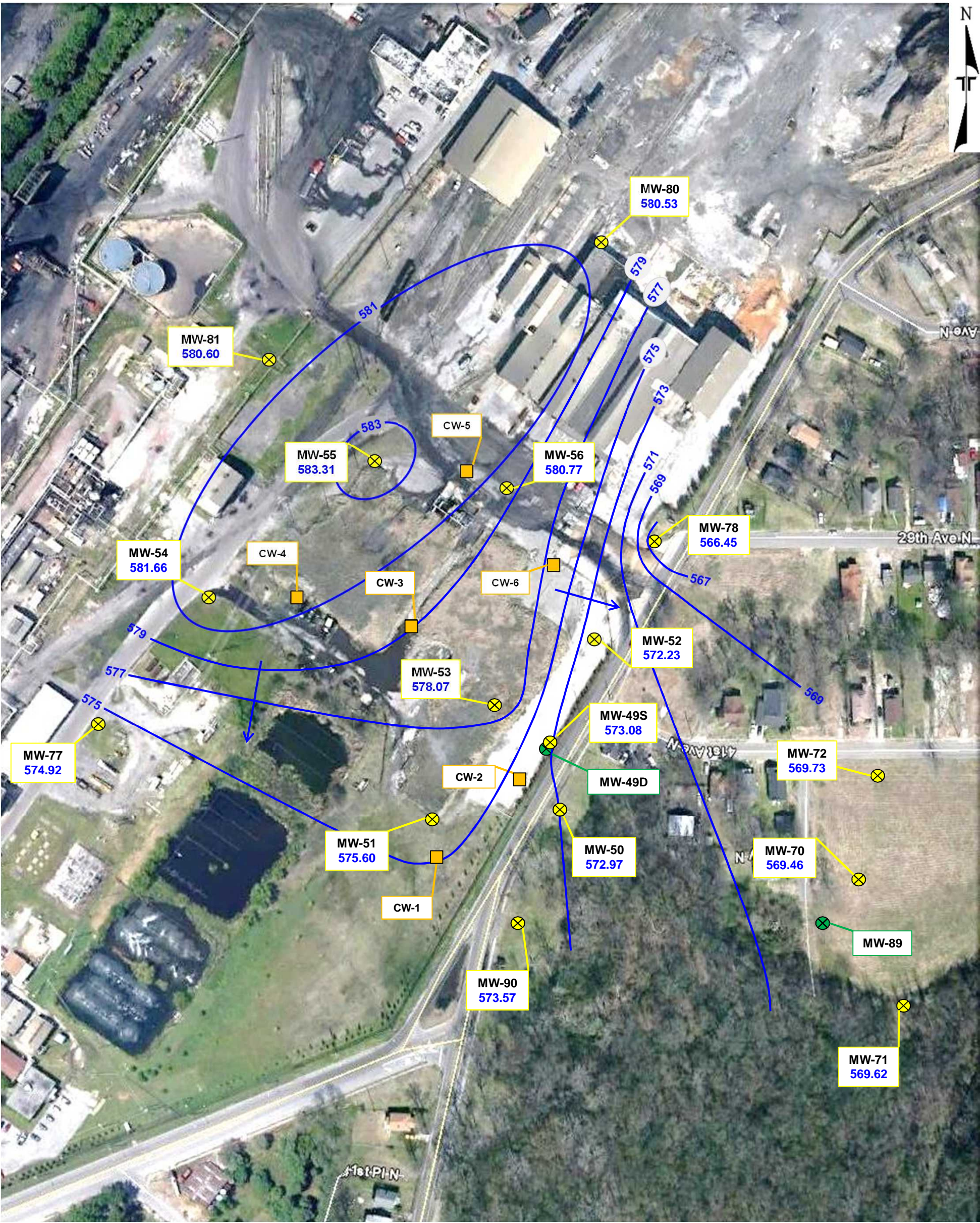
Terracon	
110 12 th Street North	Birmingham, Alabama 35203
PH. (205) 942-1289	FAX. (205) 443-5302


Site Map
Walter Coke 3500 35 th Avenue North Birmingham, Jefferson County, Alabama

Figure
1


Figure 2. Groundwater Monitoring Well Hydrograph
Walter Coke - USEPA ID No. ALD 000 828 848
3500 35th Avenue North
Birmingham, Alabama









Shallow Bedrock Monitoring Well




Deep Bedrock Monitoring Well




Containment Well Locations



Estimated Groundwater Flow Direction



578 — Potentiometric Contour



573.57 Groundwater Elevation

Locations are approximate. Data presented in feet above mean sea level.

0'

50'


100'

200'

SCALE IN FEET

Project Manager:	TWR
Drawn By:	ECR
Checked By:	TWR
Approved By:	TWR

Project No.	E1127095
Scale:	1" ≈ 200'
File Name:	E1127095
Date:	April 2014



110 12th Street North

Birmingham, Alabama 35203

PH. (205) 942-1289

FAX. (205) 443-5302

February 2014 Potentiometric Surface Map

Walter Coke
3500 35th Avenue North
Birmingham, Jefferson County, Alabama

Figure

3



LEGEND

- Shallow Bedrock Monitoring Well
- Deep Bedrock Monitoring Well
- Containment Well Locations
- ND: Benzene, Chlorobenzene, cis-1,2-DCE, Toluene, PCE, and VC were not detected

- Benzene Plume (EPA MCL – 5 µg/L)
- Chlorobenzene Plume (EPA MCL – 100 µg/L)
- Toluene Plume (EPA MCL – 100 µg/L)
- VC Plume (EPA MCL – 2 µg/L)

Data is presented in micrograms per liter (parts per billion, µg/L) .

Project Manager:	TWR
Drawn By:	ECR
Checked By:	TWR
Approved By:	TWR

Project No.	E1127095
Scale:	1" ≈ 200'
File Name:	E1127095
Date:	January 2014

Terracon	
110 12 th Street North	Birmingham, Alabama 35203
PH. (205) 942-1289	FAX. (205) 443-5302

VOC Constituent Concentrations in Groundwater, February 2014
Walter Coke 3500 35 th Avenue North Birmingham, Jefferson County, Alabama

Figure
4

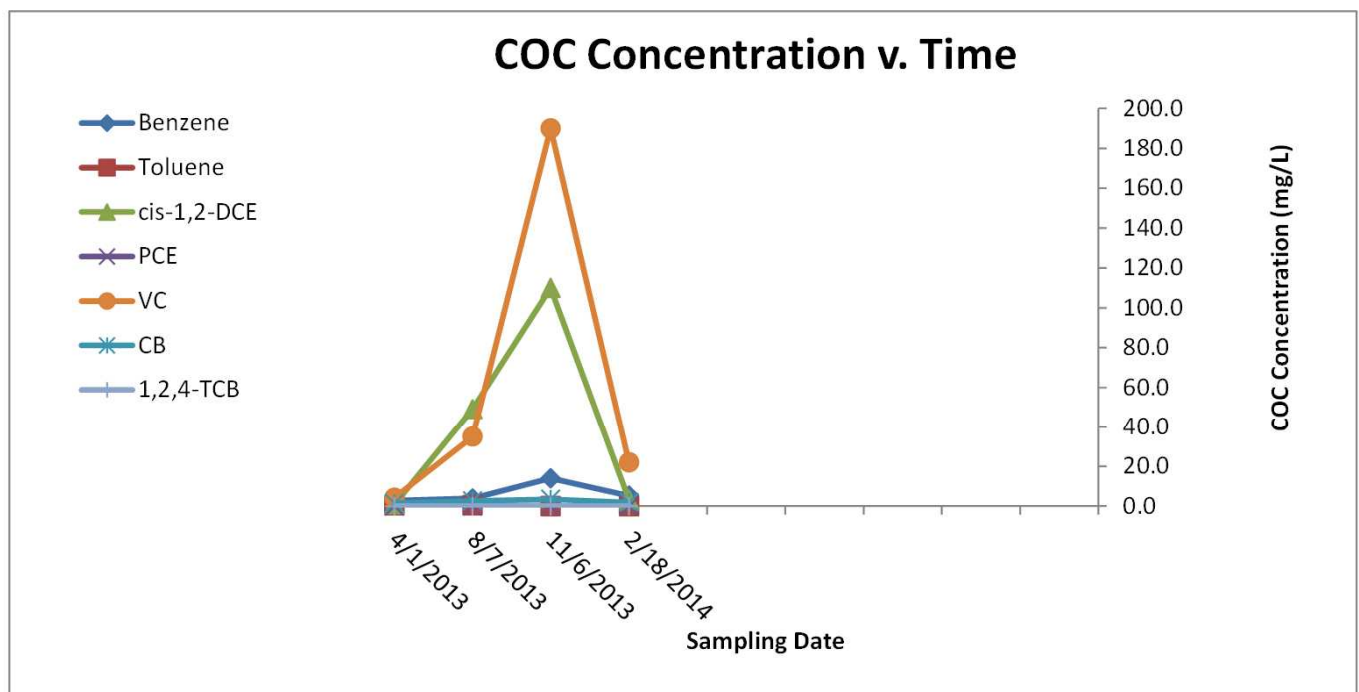
CONCENTRATION VERSES TIME

Facility Name: Walter Coke

Consulting Firm: Terracon Consultants, Inc.

Project Manager: Terrell W. Rippstein

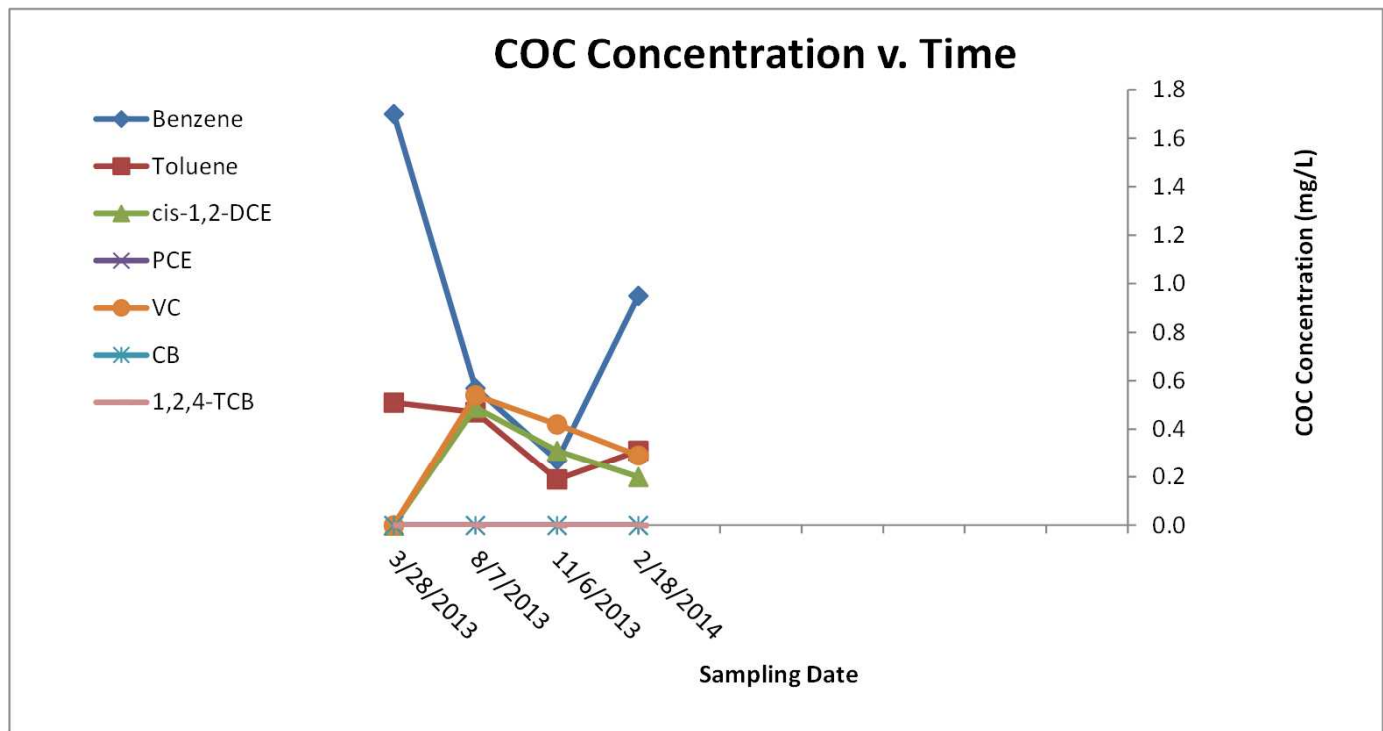
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Well ID MW-49S									
Chemicals of Concern Data									
DATE	4/1/2013	8/7/2013	11/6/2013	2/18/2014					
Benzene	2.8	3.9	14	5.3					
Toluene	0.43	0.42	ND	ND					
cis-1,2-DCE	0.92	49	110	3.200					
PCE	ND	ND	ND	ND					
VC	4.2	35	190	22					
CB	1.5	2.7	3.5	1.9					
1,2,4-TCB	ND	ND	ND	ND					



CONCENTRATION VERSES TIME

Facility Name: Walter Coke
 Consulting Firm: Terracon Consultants, Inc. Project Manager: Terrell W. Rippstein

Section 6 - Monitoring Well Chemicals of Concern Data (mg/L)										
Well ID MW-49D										
Chemicals of Concern Data										
DATE	3/28/2013	8/7/2013	11/6/2013	2/18/2014						
Benzene	1.7	0.57	0.27	1.0						
Toluene	0.51	0.47	0.19	0.3						
cis-1,2-DCE	ND	0.49	0.31	0.20						
PCE	ND	ND	ND	ND						
VC	ND	0.54	0.42	0.29						
CB	ND	ND	ND	ND						
1,2,4-TCB	ND	ND	ND	ND						



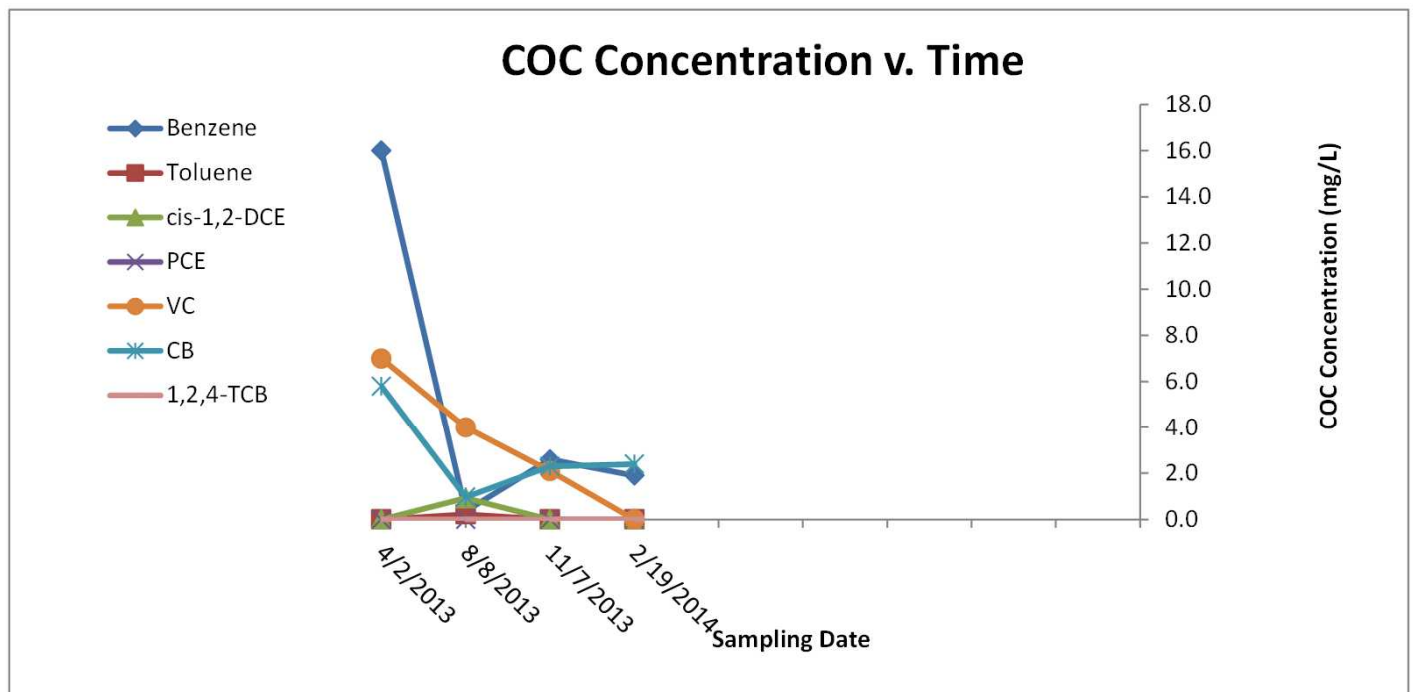
CONCENTRATION VERSES TIME

Facility Name: Walter Coke

Consulting Firm: Terracon Consultants, Inc.

Project Manager: Terrell W. Rippstein

Section 6 - Monitoring Well Chemicals of Concern Data (mg/L)										
Well ID MW-50										
Chemicals of Concern Data										
DATE	4/2/2013	8/8/2013	11/7/2013	2/19/2014						
Benzene	16	0.35	2.6	1.9						
Toluene	ND	0.22	ND	ND						
cis-1,2-DCE	ND	0.92	ND	ND						
PCE	ND	ND	ND	ND						
VC	7.0	4.0	2.1	ND						
CB	5.8	0.97	2.3	2.4						
1,2,4-TCB	ND	ND	ND	ND						



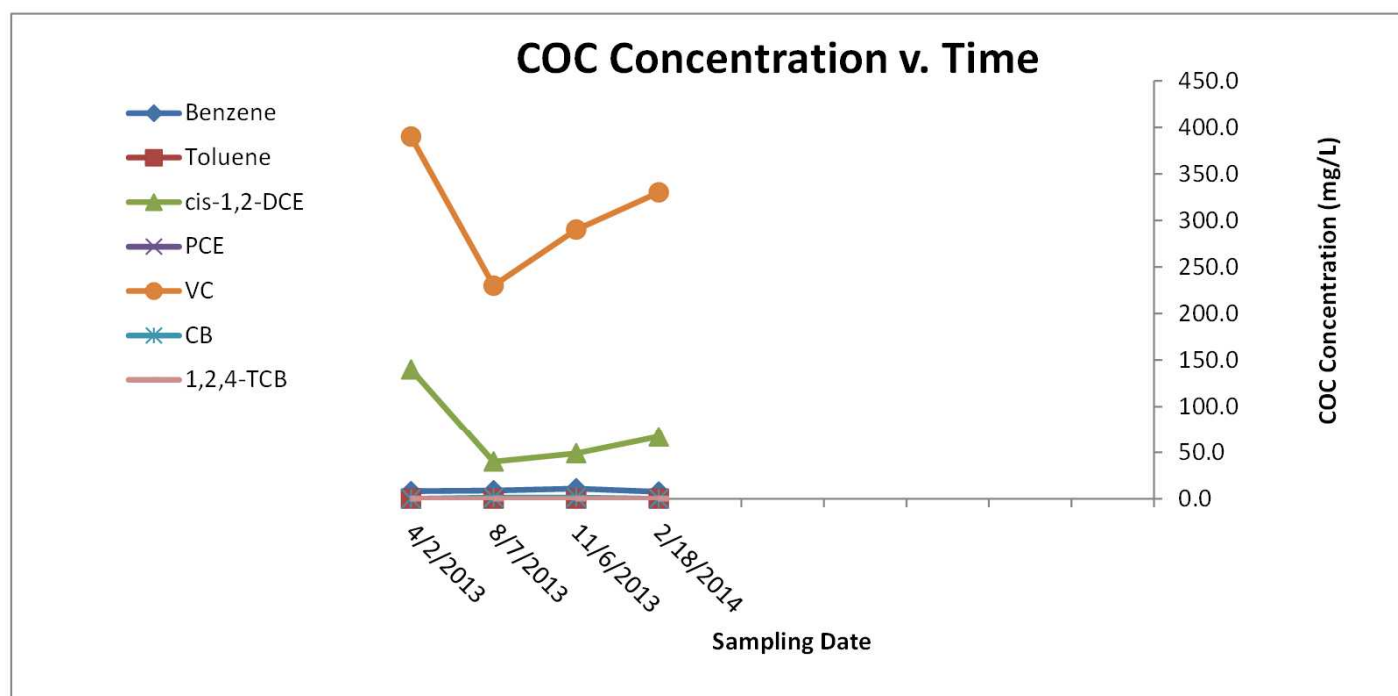
CONCENTRATION VERSES TIME

Facility Name: Walter Coke

Consulting Firm: Terracon Consultants, Inc.

Project Manager: Terrell W. Rippstein

Section 6 - Monitoring Well Chemicals of Concern Data (mg/L)										
Well ID MW-51										
Chemicals of Concern Data										
DATE	4/2/2013	8/7/2013	11/6/2013	2/18/2014						
Benzene	8.1	9.0	11	7.5						
Toluene	ND	ND	ND	ND						
cis-1,2-DCE	140	40	49	67						
PCE	ND	ND	ND	ND						
VC	390	230	290	330						
CB	ND	1.2	1.4	ND						
1,2,4-TCB	ND	ND	ND	ND						



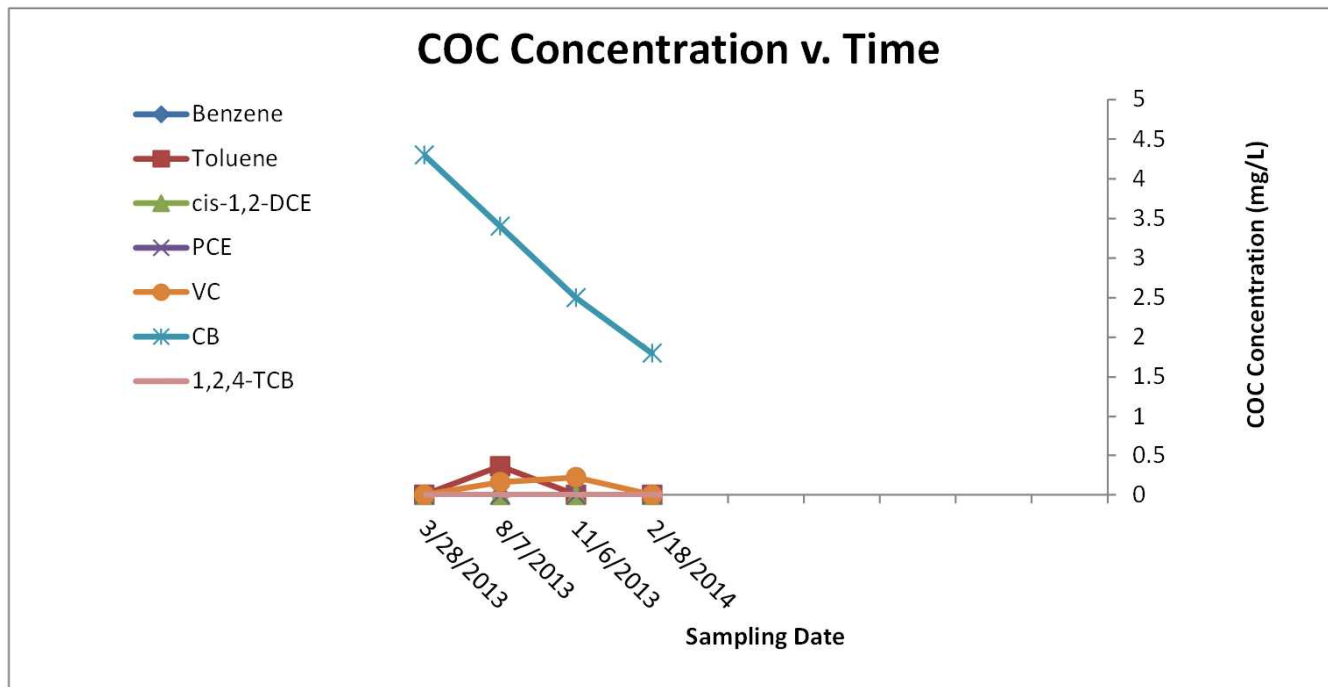
CONCENTRATION VERSES TIME

Facility Name: Walter Coke

Consulting Firm: Terracon Consultants, Inc.

Project Manager: Terrell W. Rippstein

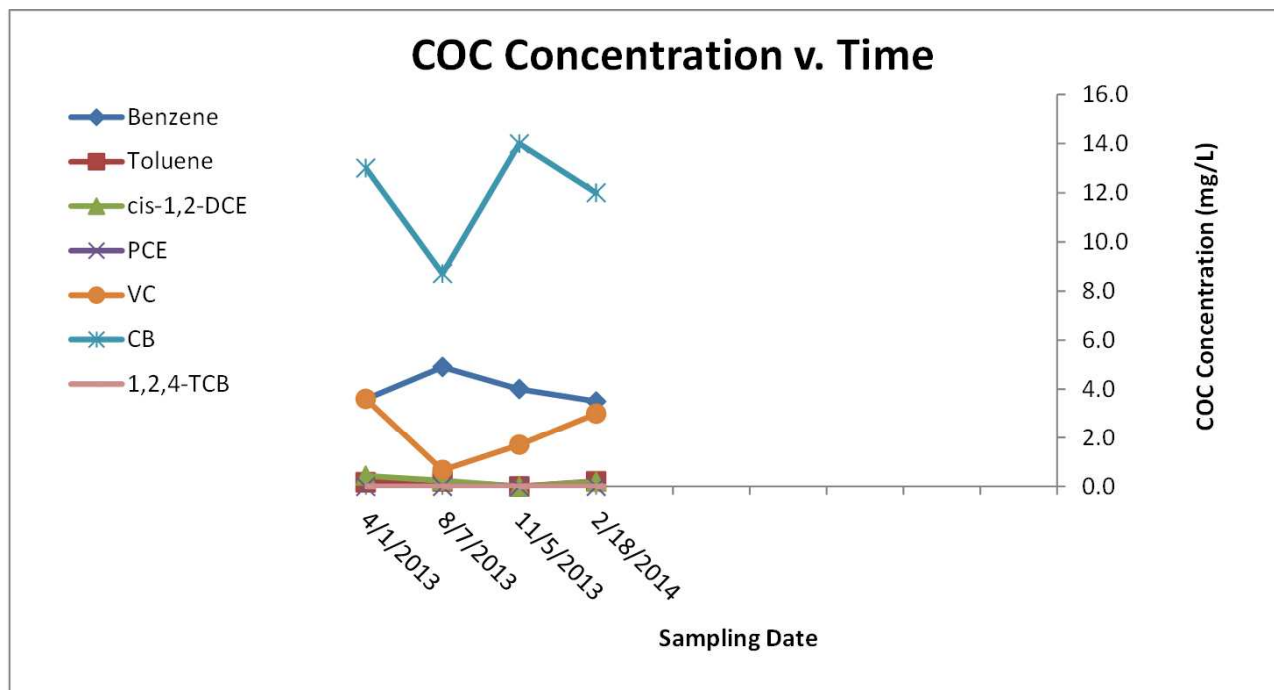
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Well ID MW-52										
Chemicals of Concern Data										
DATE	3/28/2013	8/7/2013	11/6/2013	2/18/2014						
Benzene	ND	ND	ND	ND						
Toluene	ND	0.36	ND	ND						
cis-1,2-DCE	ND	ND	ND	ND						
PCE	ND	ND	ND	ND						
VC	ND	0.16	0.22	ND						
CB	4.3	3.4	2.5	1.8						
1,2,4-TCB	ND	ND	ND	ND						



CONCENTRATION VERSES TIME

Facility Name: Walter Coke
 Consulting Firm: Terracon Consultants, Inc. Project Manager: Terrell W. Rippstein

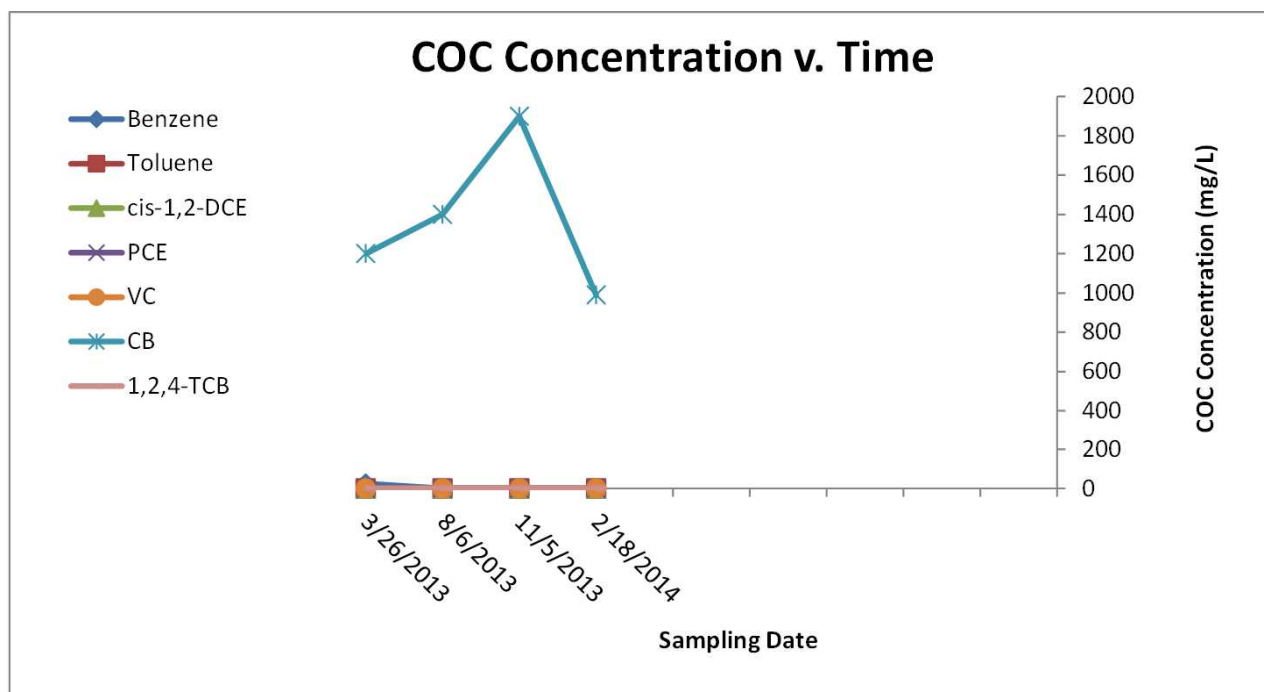
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Well ID MW-53									
Chemicals of Concern Data									
DATE	4/1/2013	8/7/2013	11/5/2013	2/18/2014					
Benzene	3.6	4.9	4.0	3.5					
Toluene	0.17	0.20	ND	0.21					
cis-1,2-DCE	0.44	0.24	ND	0.19					
PCE	ND	ND	ND	ND					
VC	3.6	0.7	1.7	3.0					
CB	13	9	14	12					
1,2,4-TCB	ND	ND	ND	ND					



CONCENTRATION VERSES TIME

Facility Name: Walter Coke
 Consulting Firm: Terracon Consultants, Inc. Project Manager: Terrell W. Rippstein

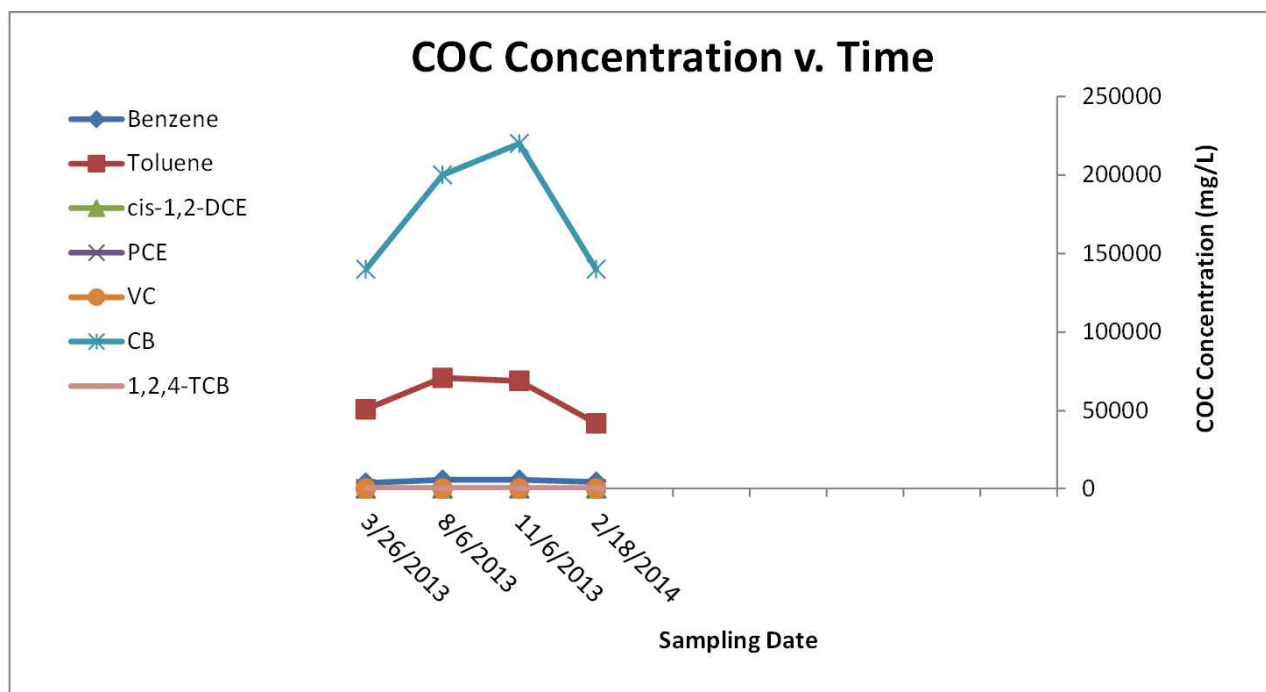
Section 6 - Monitoring Well Chemicals of Concern Data (mg/L)										
Well ID MW-54										
Chemicals of Concern Data										
DATE	3/26/2013	8/6/2013	11/5/2013	2/18/2014						
Benzene	24	ND	ND	ND						
Toluene	ND	ND	ND	ND						
cis-1,2-DCE	ND	ND	ND	ND						
PCE	ND	ND	ND	ND						
VC	ND	ND	ND	ND						
CB	1200	1400	1900	990						
1,2,4-TCB	ND	ND	ND	ND						



CONCENTRATION VERSES TIME

Facility Name: Walter Coke
 Consulting Firm: Terracon Consultants, Inc. Project Manager: Terrell W. Rippstein

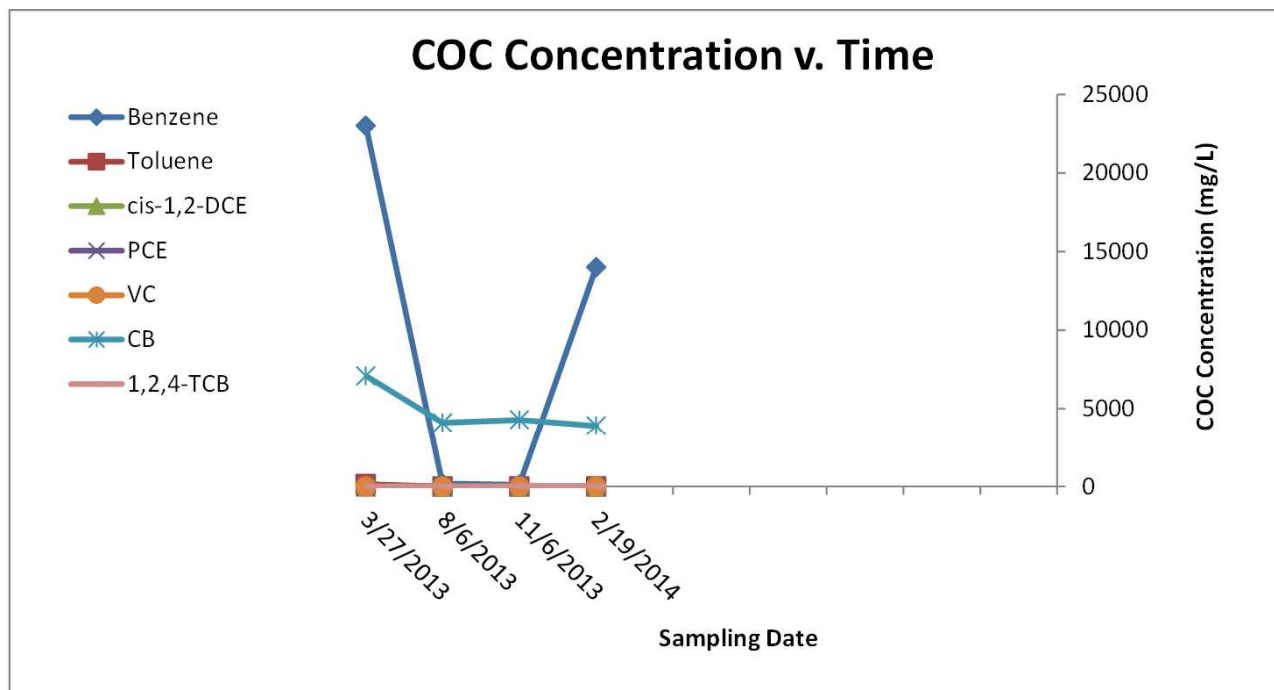
Section 6 - Monitoring Well Chemicals of Concern Data (mg/L)									
Well ID MW-55									
Chemicals of Concern Data									
DATE	3/26/2013	8/6/2013	11/6/2013	2/18/2014					
Benzene	3500	5500	5500	4200					
Toluene	51000	71000	69000	42000					
cis-1,2-DCE	ND	ND	ND	ND					
PCE	ND	ND	ND	ND					
VC	ND	ND	ND	ND					
CB	140000	200000	220000	140000					
1,2,4-TCB	ND	ND	ND	ND					



CONCENTRATION VERSES TIME

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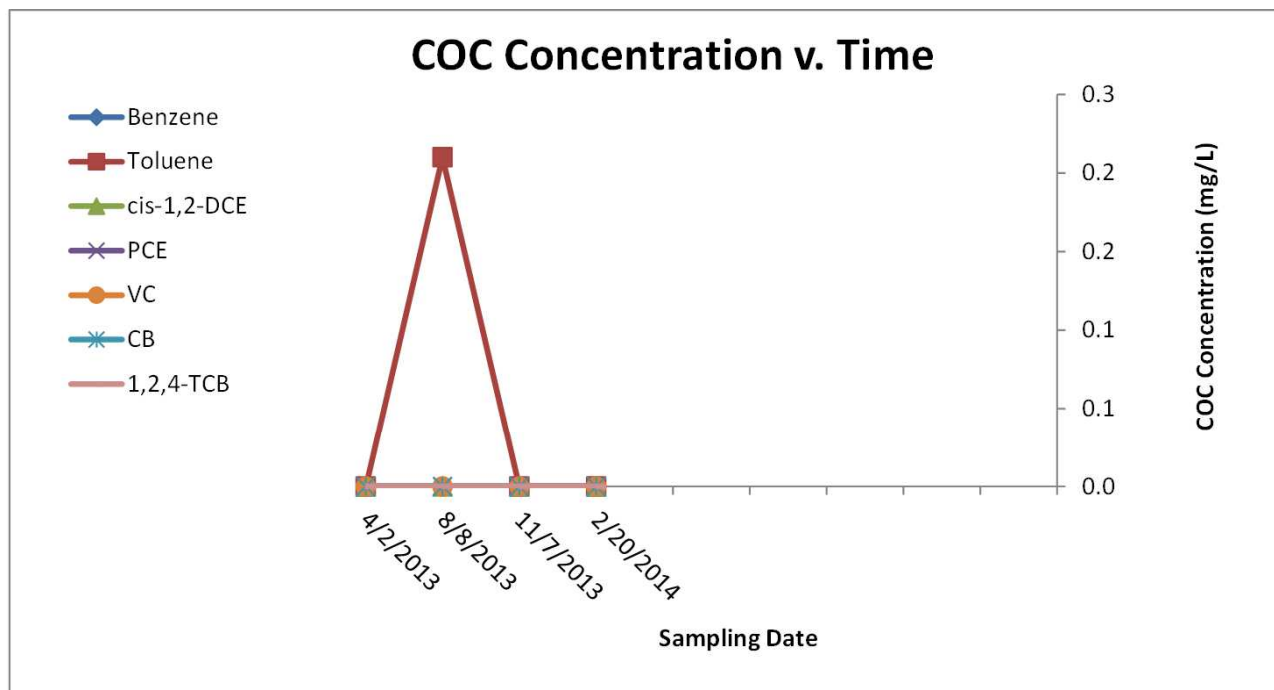
Section 6 - Monitoring Well Chemicals of Concern Data (mg/L)										
Well ID MW-56										
Chemicals of Concern Data										
DATE	3/27/2013	8/6/2013	11/6/2013	2/19/2014						
Benzene	23000	180	110	14000						
Toluene	150.0	ND	ND	ND						
cis-1,2-DCE	ND	ND	ND	ND						
PCE	ND	ND	ND	ND						
VC	ND	ND	ND	ND						
CB	7100	4100	4300	3900						
1,2,4-TCB	ND	ND	ND	ND						



CONCENTRATION VERSES TIME

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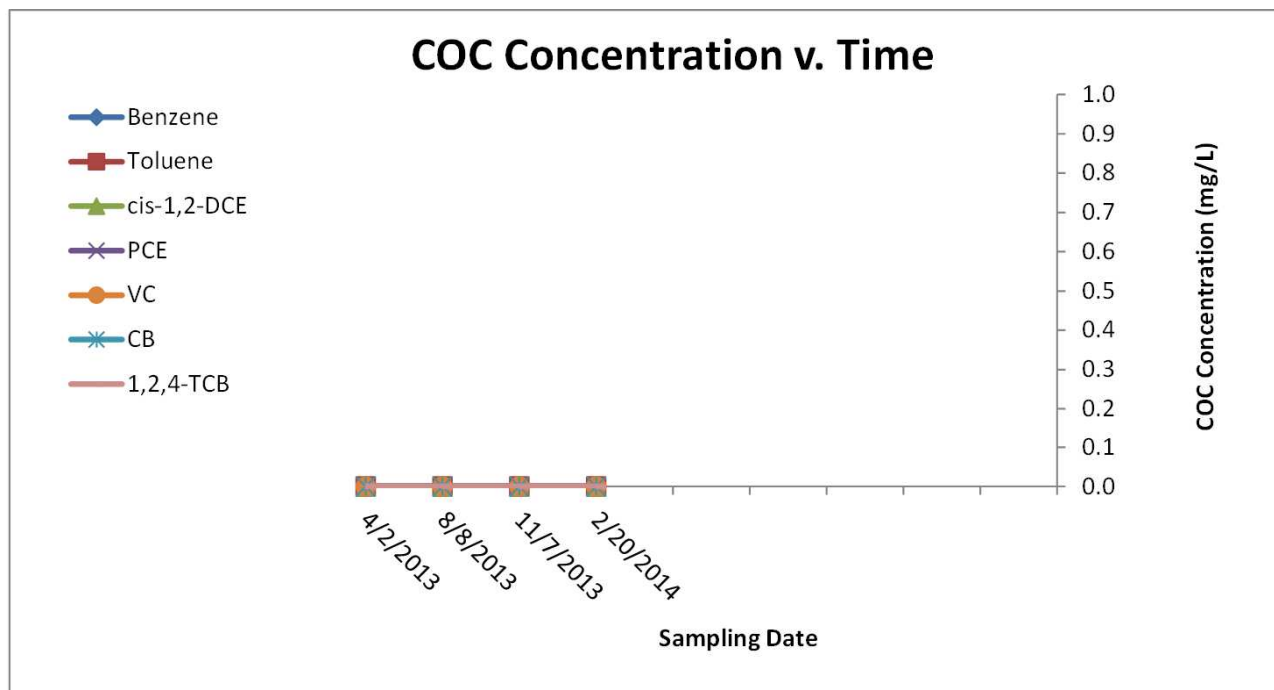
Section 6 - Monitoring Well Chemicals of Concern Data (mg/L)										
Well ID MW-70										
Chemicals of Concern Data										
DATE	4/2/2013	8/8/2013	11/7/2013	2/20/2014						
Benzene	ND	ND	ND	ND						
Toluene	ND	0.21	ND	ND						
cis-1,2-DCE	ND	ND	ND	ND						
PCE	ND	ND	ND	ND						
VC	ND	ND	ND	ND						
CB	ND	ND	ND	ND						
1,2,4-TCB	ND	ND	ND	ND						



CONCENTRATION VERSES TIME

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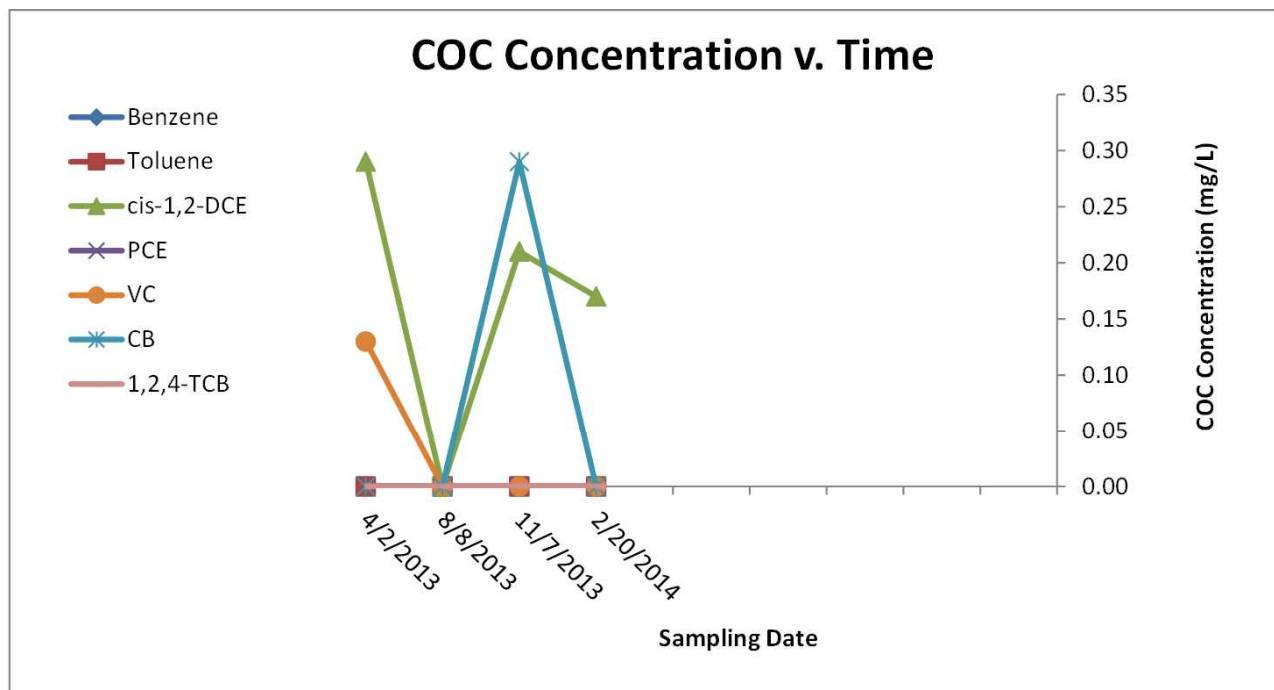
Section 6 - Monitoring Well Chemicals of Concern Data (mg/L)										
Well ID MW-71										
Chemicals of Concern Data										
DATE	4/2/2013	8/8/2013	11/7/2013	2/20/2014						
Benzene	ND	ND	ND	ND						
Toluene	ND	ND	ND	ND						
cis-1,2-DCE	ND	ND	ND	ND						
PCE	ND	ND	ND	ND						
VC	ND	ND	ND	ND						
CB	ND	ND	ND	ND						
1,2,4-TCB	ND	ND	ND	ND						



CONCENTRATION VERSES TIME

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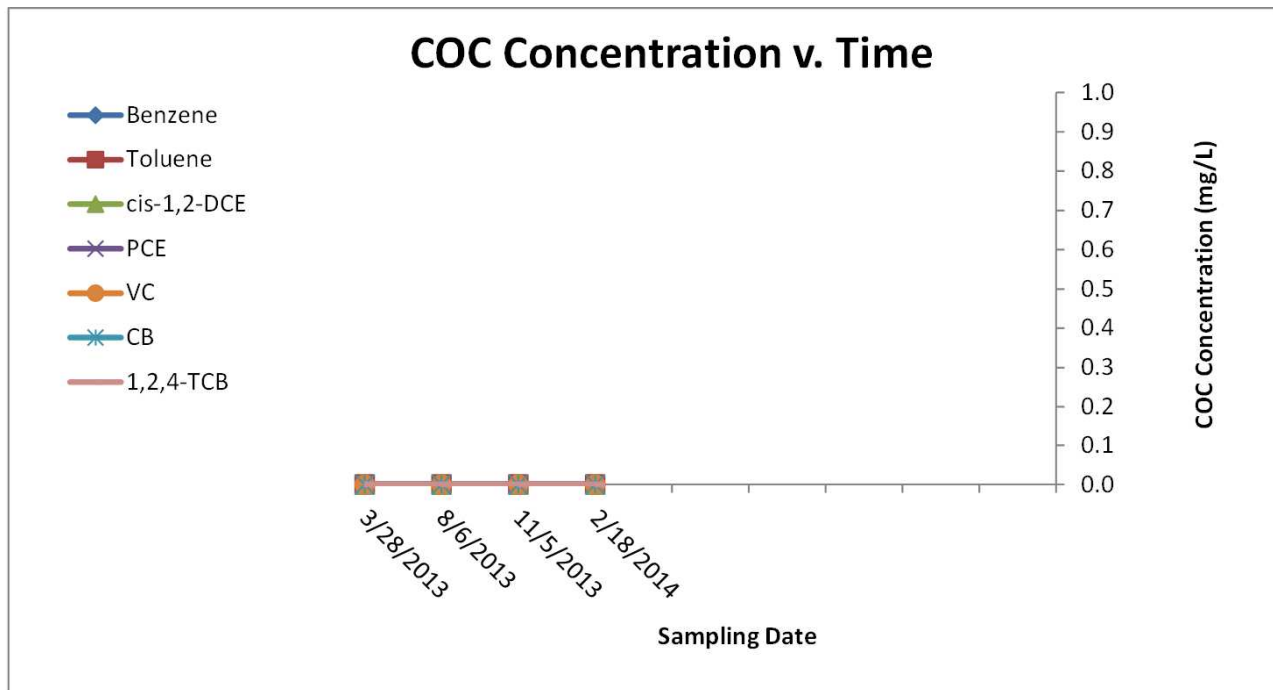
Section 6 - Monitoring Well Chemicals of Concern Data (mg/L)										
Well ID MW-72										
Chemicals of Concern Data										
DATE	4/2/2013	8/8/2013	11/7/2013	2/20/2014						
Benzene	ND	ND	ND	ND						
Toluene	ND	ND	ND	ND						
cis-1,2-DCE	0.29	ND	0.21	0.17						
PCE	ND	ND	ND	ND						
VC	0.13	ND	ND	ND						
CB	ND	ND	0.29	ND						
1,2,4-TCB	ND	ND	ND	ND						



CONCENTRATION VERSES TIME

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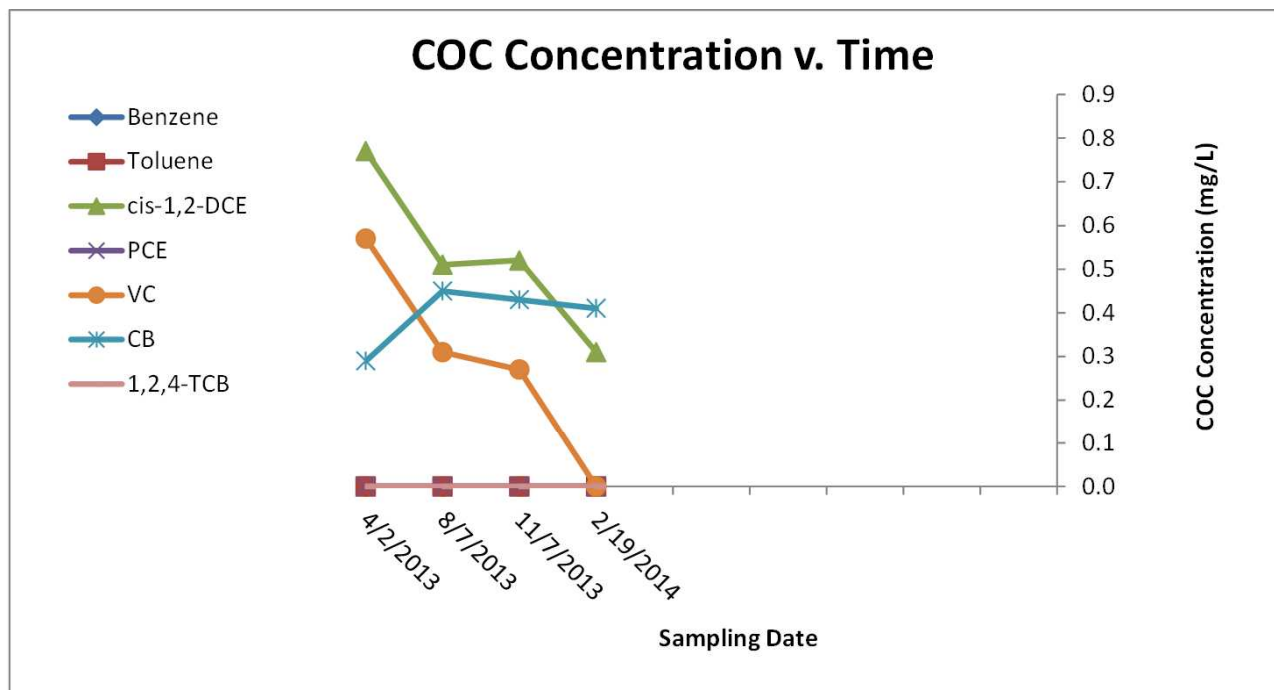
Section 6 - Monitoring Well Chemicals of Concern Data (mg/L)										
Well ID MW-77										
Chemicals of Concern Data										
DATE	3/28/2013	8/6/2013	11/5/2013	2/18/2014						
Benzene	ND	ND	ND	ND						
Toluene	ND	ND	ND	ND						
cis-1,2-DCE	ND	ND	ND	ND						
PCE	ND	ND	ND	ND						
VC	ND	ND	ND	ND						
CB	ND	ND	ND	ND						
1,2,4-TCB	ND	ND	ND	ND						



CONCENTRATION VERSES TIME

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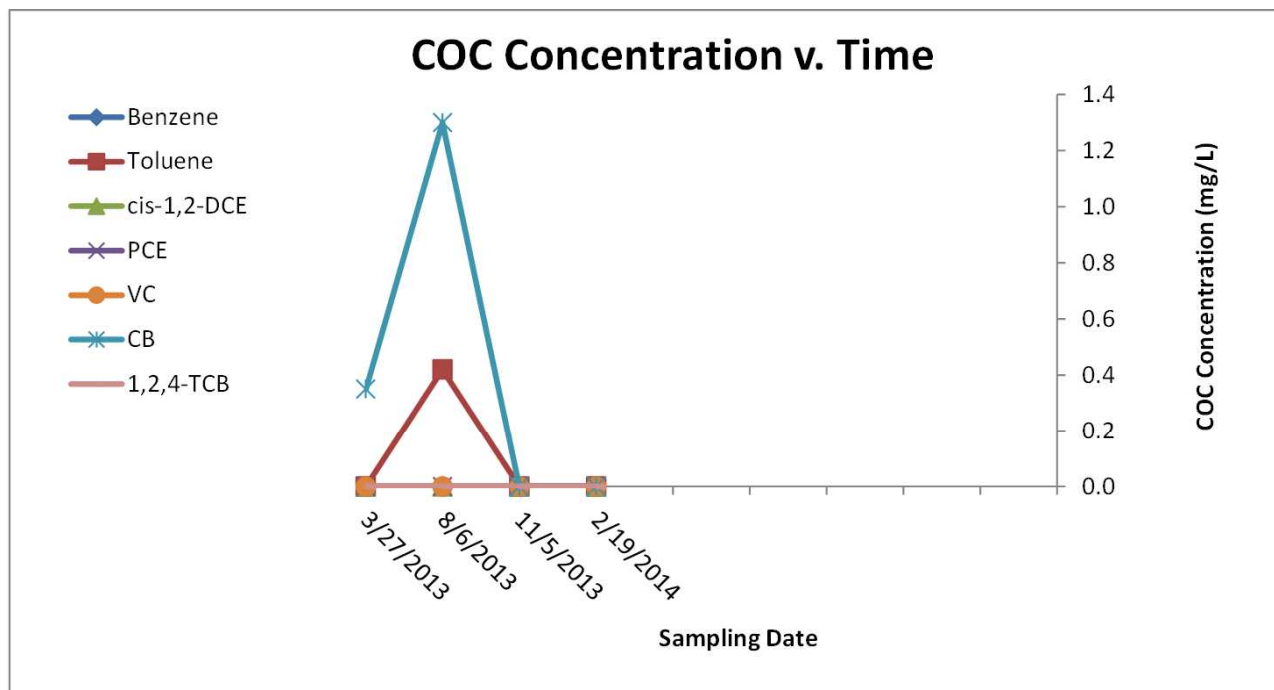
Section 6 - Monitoring Well Chemicals of Concern Data (mg/L)										
Well ID MW-78										
Chemicals of Concern Data										
DATE	4/2/2013	8/7/2013	11/7/2013	2/19/2014						
Benzene	ND	ND	ND	ND						
Toluene	ND	ND	ND	ND						
cis-1,2-DCE	0.77	0.51	0.52	0.31						
PCE	ND	ND	ND	ND						
VC	0.57	0.31	0.27	ND						
CB	0.29	0.45	0.43	0.41						
1,2,4-TCB	ND	ND	ND	ND						



CONCENTRATION VERSES TIME

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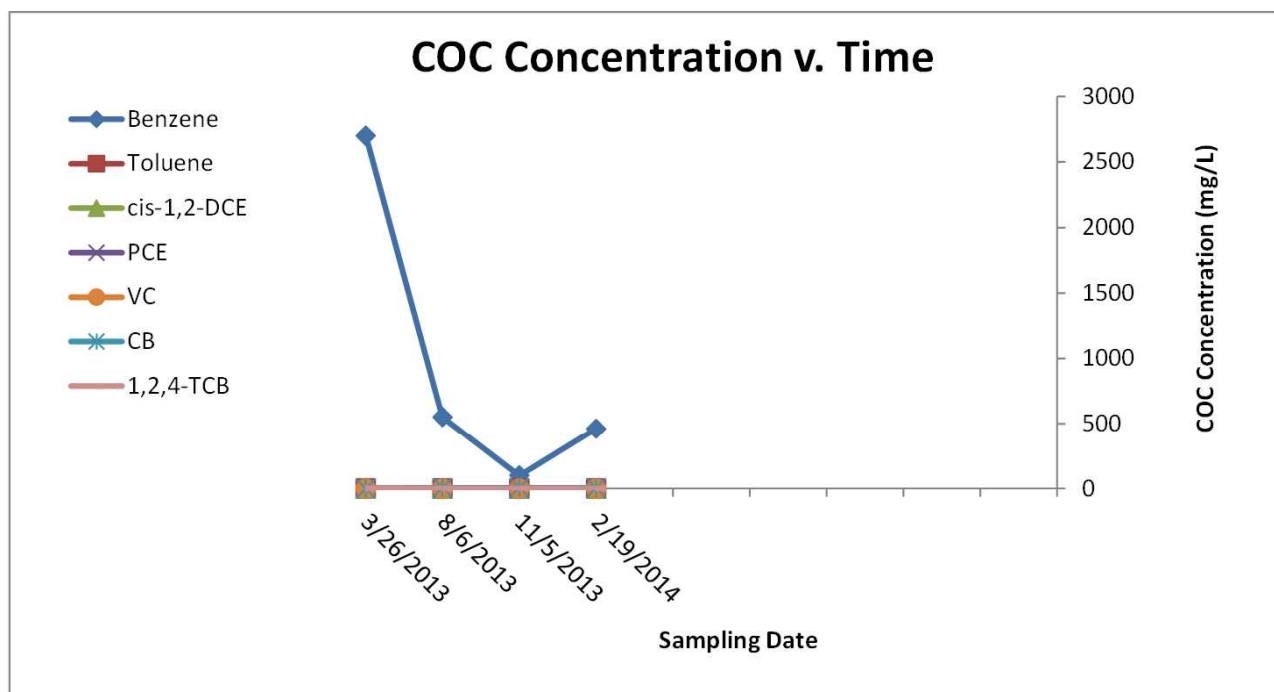
Section 6 - Monitoring Well Chemicals of Concern Data (mg/L)										
Well ID MW-80										
Chemicals of Concern Data										
DATE	3/27/2013	8/6/2013	11/5/2013	2/19/2014						
Benzene	ND	ND	ND	ND						
Toluene	ND	0.4	ND	ND						
cis-1,2-DCE	ND	ND	ND	ND						
PCE	ND	ND	ND	ND						
VC	ND	ND	ND	ND						
CB	0.35	1.3	ND	ND						
1,2,4-TCB	ND	ND	ND	ND						



CONCENTRATION VERSES TIME

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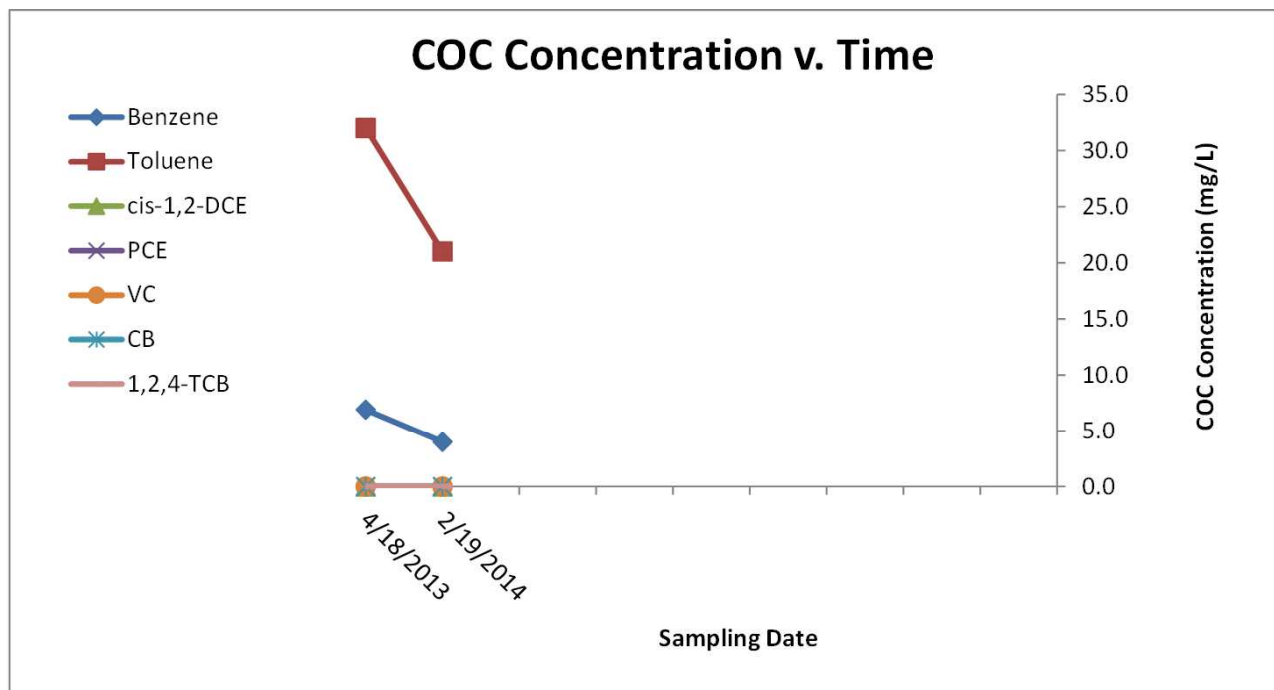
Section 6 - Monitoring Well Chemicals of Concern Data (mg/L)										
Well ID MW-81										
Chemicals of Concern Data										
DATE	3/26/2013	8/6/2013	11/5/2013	2/19/2014						
Benzene	2700	550	99	460.0						
Toluene	ND	ND	ND	ND						
cis-1,2-DCE	ND	ND	ND	ND						
PCE	ND	ND	ND	ND						
VC	ND	ND	ND	ND						
CB	ND	6.0	6.0	4.7						
1,2,4-TCB	ND	ND	ND	ND						



CONCENTRATION VERSES TIME

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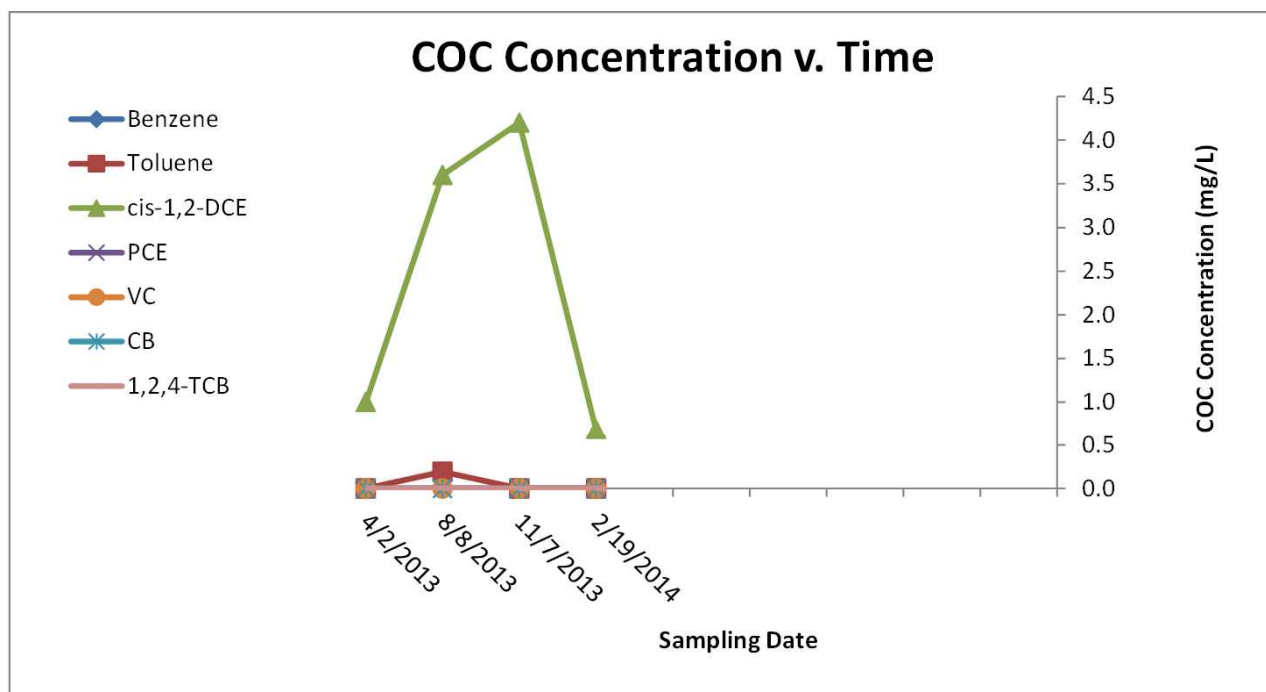
Section 6 - Monitoring Well Chemicals of Concern Data (mg/L)										
Well ID MW-89										
Chemicals of Concern Data										
DATE	4/18/2013	2/19/2014								
Benzene	6.9	4.0								
Toluene	32	21.0								
cis-1,2-DCE	ND	ND								
PCE	ND	ND								
VC	ND	ND								
CB	ND	ND								
1,2,4-TCB	ND	ND								



CONCENTRATION VERSES TIME

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Section 6 - Monitoring Well Chemicals of Concern Data (mg/L)										
Well ID MW-90										
Chemicals of Concern Data										
DATE	4/2/2013	8/8/2013	11/7/2013	2/19/2014						
Benzene	ND	ND	ND	ND						
Toluene	ND	0.19	ND	ND						
cis-1,2-DCE	1.0	3.6	4.2	0.68						
PCE	ND	ND	ND	ND						
VC	ND	ND	ND	ND						
CB	ND	ND	ND	ND						
1,2,4-TCB	ND	ND	ND	ND						



CONCENTRATION VERSES TIME

Facility Name: Walter Coke

Consulting Firm: Terracon Consultants, Inc.

Project Manager: Terrell W. Rippstein

Section 6 - Monitoring Well Chemicals of Concern Data (mg/L)										
Effluent										
Chemicals of Concern Data										
DATE	8/12/2013	11/6/2013	2/20/2014							
Benzene	4000	1000	310							
Toluene	12000	1300	160							
cis-1,2-DCE	ND	21	14							
PCE	ND	ND	ND							
VC	ND	50	20							
CB	1400	210	170							
1,2,4-TCB	ND	25	67							

